स्वाध्याय स्वमन्थन स्वावलम्बन

UTTAR PRADESH RAJARSHI TANDON OPEN UNIVERSITY

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MBA – ~~6.1~~ 4.3
STRATEGIC MANAGEMENT

FIRST BLOCK
Strategy, Environment and Structure

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Strategic Management

Block

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STRATEGY, ENVIRONMENT AND STRUCTURE

BLOCK 1 STRATEGY, ENVIRONMENT AND STRUCTURE

This introductory block has four units.

Unit 1 gives an introduction of strategic management and distinguishes it from long range planning and operational management. Strategy at various levels, elements and benefits of strategic management and the role of general managers in the formulation and implementation of strategy are discussed.

Unit 2 deals with environmental analysis. The need for environmental analysis, types of environments, sources for collection of environmental information and the interface between strategy and environment are explained. As an illustration we have given an appendix to this unit which discusses the socio-economic environment of the Petro-chemical Industry and attempts a forecast to 2000 AD.

Unit 3 explains the strategic management process and identifies the various steps involved in that process. It is emphasised that management should constantly review its strategies and find out whether they are working or not. In case they are found to be not working, they must be either rejected or modified or replaced with new ones. The implementation process is of particular importance which should be continuously monitored.

Unit 4 examines the relationship between strategy and structure. It begins by highlighting the need for matching organisation structure to strategy. The matching process should attempt to identify the key success factors and provide for the needed decentralisation and coordination. The various factors influencing the organisational structure are briefly described. This is followed by a thorough discussion of structure follow strategy proposition. The stages model of organisational growth is also presented. The focus then shifts to a discussion of the strategy related benefits and limitations of some commonly used organisational forms. As the business is becoming increasingly international and as managers are becoming more aware of the opportunities and challenges of global markets, organisational structuring of multinational firms has been dealt with in sufficient detail. The various structural forms are examined with a historical perspective. With expansion of activities of the government in the area of public welfare, a separate section is devoted to consideration of various structural forms for organising development programmes. Toward the end of the unit, two perspectives — one conceptual and the other empirical — are provided on the strategy and structure.

MS-91 STRATEGIC MANAGEMENT

You are aware that strategic management is the process by which an organisation formulates its strategies and implements them. It includes a systematic study of the internal and the external environments with a view to identify and assess the relevant opportunities and threats, a constant appraisal of the organisational strengths and weaknessess, a thorough analysis of the strategic choices, and evaluation of strategy. With rapid changes taking place in the various components of the organisation's environment, it has become imperative for a firm to manage its affairs strategically if it is to survive and grow in the increasingly competitive environment.

You will recall that we had given you basic conceptual understanding and familiarised you with some tools and techniques of strategic analysis in our earlier course, namely MS-11: Corporate Policies and Practices. The present course MS-91 is built upon this earlier course. We should like to suggest that you keep all the blocks of MS-11 handy and refer to them whenever the occasion so requires. It would be a good idea to first review, recapitulate or have another look at the reading material i.e., various blocks of MS-11 before you begin studying this course. MS-91, though a course in its own right, in a sense, suppliments the earlier course MS-11. For your facility the course structure of MS-11 is presented below.

MS-11 CORPORATE POLICIES AND PRACTICES

Course Components

Block	Unit Nos.	Particulars	Block	Unit Nos.	Particulars
I		CORPORATE STRATEGY AND PLANNING	IV		STRATEGIC ANALYSIS
	1	Concept of Corporate Strategy		9	Cost Dynamics
	2	The 7-S Framework		10	Portfolio Analysis and Display Matrices
	3	Corporate Policy and Planning in India		11	Operating and Financial Analysis
	Case:	Nalanda State Small Industries Corporation Ltd.		Case:	Hindustan Special Tubes Ltd.
II		CORPORATE MANAGEMENT	V		STRATEGIC CHOICES
	4	Board of Directors: Role and Functions		12	Strategic Alternatives
	5	Top Management: Role and Skills		13	Diversification
	Case:	Hindustan Tractors Ltd.		14	Mergers and Acquisitions
III		SWOT ANALYSIS		Case:	Indian Petro-Chemicals Corporation Ltd.
	6	Environmental Analysis	VI		IMPLEMENTATION AND EVALUATION OF STRATEGY
	7	Competitive Analysis		15	Implementation of Strategy
	8	Internal Corporate Analysis		16	Evaluation and Control of Strategy
	Case:	Raj Vardhan Enterprises		17	Turnaround Management
				Case:	Punjab Tractors Ltd.

UNIT 1 STRATEGIC MANAGEMENT—AN INTRODUCTION

Objectives

After reading this unit, you should be able to:

- understand the meaning and levels of strategy
- recognise the need for strategic management
- distinguish between strategic management, operational management and long-range planning
- identify the elements and benefits of strategic management
- appreciate the role of general managers in strategic management.

Structure

1.1 INTRODUCTION

Strategic management is the process by which an organisation formulates its objectives and manages to achieve them. Strategy is the means to achieve the organisational ends.

A strategy is a route to the destination viz., the "objectives of the firm". Picking a destination means chosing an objective. Objectives and strategies evolve as problems and opportunities are identified, resolved and exploited.

The interlocking of objectives and strategies characterise the effective management of an organisation. The process binds, coordinates and integrates the parts into a whole. Effective organisations are tied by means-ends chains into a purposeful whole. The strategies to achieve corporate goals at higher levels often provides strategies for managers at lower levels.

1.2 STRATEGIC VISION AND STRATEGIC MANAGEMENT

Managers must have strategic vision to become strategic managers and thereby to manage the organisation strategically. Strategic vision is a pre-requisite of the strategic managers. Strategic vision implies a profound scanning ability of the environment in which the company is in i.e., knowing the objectives and values of the organisation stakeholders and bringing that knowledge into future projections and plans of the organisation. The managers strategic vision involves:

- The ability to solve complex and more complex problems;
- The knowledge to be more anticipatory in perspective and approach, and
- The willingness to develop options for the future.

1.3 WHAT IS A STRATEGY?

The word strategy is derived from the Greek word "Strategtia", which was used first around 400 B.C. This connotes the art and science of directing military forces. The strategy, according to a survey conducted in 1974 which asked corporate planners to define what they meant by strategy, "includes the determination and evaluation of alternative paths to an already established mission or objective and eventually, choice of the alternative to be adopted." Simply put, a strategy outlines how management plans to achieve its objectives. Strategy is the product of the strategic management process. Generally, when we talk of organisational strategy, it refers to organisation's top level strategy. However, strategies exist at other levels also.

1.4 STRATEGIC MANAGEMENT AND OPERATIONAL MANAGEMENT

In most of the organisations managers are required to deal with problems of operational control, such as the efficient production of goods, the effective delivery of services to beneficiaries, the management of sales force, the monitoring of financial performance or the design of some new system that will improve the efficiency of the operations. Even though all these are very important tasks, they are essentially concerned with effectively managing a limited part of the organisation within the context of some more general guidelines given to the manager. This is operational management. Most of the managers spend most of their time doing this. This is vital to the effective implementation of strategy but it is not strategic management.

Strategic management is a stream of decisions and actions which lead to the development of an effective strategy or strategies to help achieve corporate objectives. The strategic management process is the way in which strategists determine objectives and make strategic decisions. Strategic management can be found in various types of organisations, business, service, cooperative, government, etc.

Activity 1
List four major functions of top management and identify some decisions relating to those functions. Segregate the decisions into operational and strategic decisions.

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1.5 LONG RANGE PLANNING AND STRATEGIC MANAGEMENT

In the management of business in earlier times, the focus of the manager's job was on today's decisions for today's world in today's business. This approach may have been satisfactory then. However, the changes that have been taking place over a period of time in the environment have led to the need for a different approach to management.

Instead of focussing all their time on today's problems, the managers began to see the value of trying to anticipate the future and to prepare for it. They did this in several ways. One way was to evolve systems and prepare manuals (or procedures) for decisions which are routine and repetitive in nature. This allowed more time for more important decisions. Another way was to prepare budgets and thereby anticipate future sales and flows of funds.

These things helped, but they tended to be based on the present business and its present conditions and as such these mechanisms could not deal well with the changes by themselves. The lack of emphasis on future in budgeting led to long range planning. Long

range planning focused on forecasting the future by using economic and technological tools. The formulation of these plans was the responsibility of corporate staff group, whose reports were forwarded to top management. The top management could approve, disapprove or modify these plans. However, the corporate planners were not the decision makers.

Long range planning had some impact, but not as much as would be expected if the top management were involved. Moreover, the corporate planners were producing what can be termed "first-generation plans". First-gemeration planning means the firm chooses the most probable appraisal the future environment and of its own strengths and weaknesses. From this, it evolves the best strategy for a match of the environment and the firm—a single plan for the most likely future.

Today's approach is called "strategic planning." The top management, including the board of directors, and corporate planners have parts to play in strategic management. But the starring roles are for the general managers of the corporation and its major operating divisions. Strategic management focuses on "second-generation planning," that is, analysis of the business and the preparation of several scenarios for the future. Contingency strategies are then prepared for each of these likely future scenarios.

1.6 NEED FOR STRATEGIC MANAGEMENT

You might be aware that environment is becoming more complex. Predicting the future with accuracy is difficult. The number of variables to be considered in the decision making process are increasing. Production and other management system and related technologies become obsolete within a short span of time. The number of events—both domestic and world—affecting the organisation is increasing. With all these happening over-reliance on experience may prove to be costly. More reliance has to be placed on creativity, innovation and new ways of looking at the organisation in the world in which we exist. A rapidly changing environment requires that managers make a clear distinction between long range planning and strategic planning which is a component of strategic management. Strategic management sets the major directions for the organisation i.e., mission, major products/ services to be offered and major market segments to be served. Without the major directions being set before, establishing objectives does not carry much sense. The strategic management is the major vehicle for planning and implementing major changes an organisation must make. Many organisations tend to spend substantial amount of time and effort in developing the strategic plan, without devoting sufficient attention to the means and circumstances under which the strategic plans will be implemented. It has often been seen that change comes through the implementation and not through the plan. A technically imperfect plan but implemented well will achieve far more than the perfect plan that never gets off the paper on which it has been typed. Though strategic management begins with strategic planning, the other components are no less important. Especially when we talk about the implementation of strategic plans, the need for proper corporate culture, organisation structure, rewards and recognition, and appropriate policies regarding performance appraisal need to be stressed.

1.7 LEVELS OF STRATEGY

Strategies may exist at three levels in an organisation. The levels are corporate level, business level, and operating level.

Corporate Level: The Board of Directors and the Chief Executive Officer are the primary groups involved in this level of strategy making. Corporate planners and consultants may also be involved. In small and family owned businesses the entrepreneur is both the general manager and chief strategic manager. Here the strategy is concerned with what sorts of business should the company as a whole be in. Decisions like spreading the range of business interests, the types of business the company should enter, widening of range of products or services or geographic area to move in are strategic decisions of the general sort.

Business Level: Strategic Business Unit (SBU) managers (e.g., Divisional General Managers), are involved at this level in taking strategic decisions. Here strategies are about how to compete in particular product-markets. The strategies here are related to a unit within the organisation.

Operating Level: This third level of strategy is at the operating end of the organisation. Here, the strategies are concerned with how the different functions of the enterprise like marketing, finance, manufacturing, etc. contribute to the strategies of other levels. These contributions are important in terms of how can an organisation become competitive. Competitive strategy may depend to a large extent on decisions about market entry, price, product offer, financing, manpower, investment in plant, etc. In themselves these are decisions of strategic importance but are made, or at least strongly influenced at operational levels.

Activity 2
Identify at least four decisions for each level of strategy.

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1.8 ELEMENTS OF STRATEGIC MANAGEMENT

Strategic Management is concerned with deciding on the strategy and how the strategy is to be put into effect. Strategic management has three main elements: strategic analysis, strategic choice, and strategic implementation.

Strategic Analysis: This is concerned with understanding the strategic situation of the organisation. This includes the examination of matters like changes in the organisational environment and its effects on the organisation, assessment of its resources and strengths in the context of these changes, effect of the changes on people and on their present and future aspirations.

Strategic Choice: Strategic analysis provides a basis for strategic choice. This is concerned with the formulation of possible courses of action, their evaluation and the choice between them. This means that the strategic choice has three parts to it—generation of strategic options, evaluation of strategic options and selection of strategy.

Strategic Implementation: This is concerned with translation of general directions of strategy into action. This is also as important as strategic analysis and choice. Implementation can be thought of as having several parts. This involves resource planning in which logistics of implementation are examined. It also takes into account the organisation structure needed to carry through the strategy and of course the systems and people who implement the strategy.

1.9 BENEFITS OF STRATEGIC MANAGEMENT

Strategic management allows an enterprise or an organisation to base its decisions on long range forecasts. It also allows the firm to take action at an early stage of a new trend and consider the lead time for effective management. Louis Pasteur rightly said "chance favours the prepared man". As the strategic management process stimulates future thinking, the strategic managers will be prepared to respond to uncertain environments. The management process becomes flexible enough to allow for any unanticipated future changes.

Empirical studies have been conducted to measure the relationship between strategic management and organisational performance. While the majority reported a positive relationship, the mixed results should not be particularly surprising or discouraging in view of the fact that so many other variables can have a significant impact on the performance of an organisation.

A primary benefit of strategic management is that it provides an organisation with consistency of action. A sound strategic management process helps ensure that all organisational parts are working toward the same objectives and purposes. Without strategic management the organisational units often have a tendency to drift in different directions.

Many people believe that one of the major benefits of strategic management is the result of the process itself as opposed to the outputs produced by the process. In other words, the mental exercise that takes place in the process of preparing strategic plans is as valuable as the actual plans that might be produced by the process. The strategic management process forces managers to be more proactive and conscious of their environments. It gets managers into the habit of thinking in terms of the future.

Most people perform better if they know what is expected of them and where the enterprise is going. This can also help reduce conflict. Strategic management paves the way for employees to shape their work in the context of shared corporate goals and motivates them to achieve more goals. It also serves as the basis for management control and evaluation.

Another real benefit of strategic management is the opportunity to involve different levels of management in the process. Not only does this encourage commitment on the part of participating managers, but it also reduces resistance to proposed changes. People tend to resist anything they don't understand. On the other hand, most people accept decisions when they understand the limiting factors and possible alternatives.

Strategic management also helps to improve corporate communication, the coordination of individual projects, the allocation of resources, and short range planning.

While strategic management tends to be more formalised in large organisations, it can be just as necessary and valuable in small organisations. While strategic management will never be a cure-all, especially for the incompetent management, it can go a long way in improving an organisation's long-term performance. As the old adage says, "If you don't know where you're going, any road will get you there." Sound strategic management can help provide the necessary direction.

Activity 3
Identify the benefits your organisation had from the adoption of strategic management.

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1.10 GENERAL MANAGER AND STRATEGIC MANAGEMENT

General Managers (GMs) are the key players in the strategic management process ıe GMs of a firm are executives at the top level of the enterprise. They are responsible for the survival and success of the company. They have titles such as managing director, president, vice-president, executive vice-president, etc. If the business is divided into strategic business units (SBUs) or operating divisions, then the persons at the top of these units are also general managers.

The traditional impression is that the GM is a reflective thinker who maps out strategy, designs an organisation to implement the plan, and guides people through various tactical plans to accomplish objectives using vast experience and insight. The GM is an entrepreneur because he sets goals, he is a strategist because he plans, he is an organisation builder because he organises, he is a leader because he directs, and is a chief implementer because he controls. The task is to lead the firm or SBU through uncharted territory under uncertain circumstances.

The above tasks may not be so neatly compartmentalised as you might perhaps think. Human, technical, economic, and political circumstances are only partly subject to rational analysis. The general manager must integrate pieces of a puzzle, some of which may be missing, distorted, or not even yet made, and most of which are continuously changing. According to the Harvad Business School, ρ neral-management leadership "requires judgement, courage, empathy, the ability to articulate and persuade."

The studies indicate that the general manager must simultaneously handle several different activities on a schedule which provides little time for contemplation. In the process, intuition and judgement become the preferred decision-making models. Mintzberg's list of roles provides an example of the different types of activities a GM may be asked to perform. Let's use his categories of interpersonal, informational, and decisional roles to guide the discussion.

Interpersonal Roles: As the symbolic figurehead of the organisation, the GM performs numerous routine ceremonial duties of a legal or social nature. This is often important in legitimising the firm to outsiders. As a leader, the GM has responsibility for staffing the organisation and training and motivating subordinates. In the liaison role the manager maintains a network of outside contacts to obtain favours and information. Note that the GM can accomplish liaison tasks while engaged in activities related to the figurehead role.

Informational Roles: In the role of a monitor, managers read periodicals and reports, make plant tours, or observe meetings to seek information about the organisation and its environment. As a disseminator, the GM transmits much of the information received to outsiders and insiders. Information about the organisation is also transmitted to outsiders through the mail, phone calls, or board meetings as the manager acts as a spokesperson for the organisation. Once again, note how the liaison, leader, or figurehead role can do double duty for the collection and distribution of information.

Decision Roles: As an entrepreneur, the GM performs strategic functions of initiating projects to take advantage of opportunities. Strategy and review meetings are conducted to do this and to correct problems or solve crises when the role shifts to that of disturbance handler. As resource allocators, managers authorise budgets and approve requests for the allocation of human, monetary, and material resources. Finally, the top manager is responsible for representing the organisation as a negotiator for contracts with labour unions, major suppliers, or major customers.

In fact, the GM must spend substantial amounts of time in his capacity as the organisational leader and personal leader and in communicating with stakeholders outside and inside the organisation. This would seem to leave little room for involvement with strategic planning or for service as the"architect of organisation purpose." Yet this role seems to encompass all the others.

The formulation of strategy and plans for implementation are often considered the exclusive realm of the general manager. Yet many different individuals may be involved in the strategic management process. Boards of director, who review the results of the strategies and chief executive officers, are the main corporate-level strategists. Corporate planning staff help top managers in planning and implementing the strategies, and consultants may be hired to help corporate planners or do the corporate planning work if there is no corporate planning staff. General managers of strategic business units and lower-level participants are also involved with goal setting and strategy formulation and implementation.

1.11 SUMMARY

In this unit we introduced the concepts of strategy and strategic management. Strategic management is a stream of decisions and actions with a view to develop an effective strategy (or strategies) which would help the organisation achieve its corporate goals. Strategic management involves strategic analysis, strategic choice making and strategic implementation. Strategies exist at all levels — corporate level, business level and operational level. In this unit we also discussed the need for strategic vision for strategic managers and the benefits of strategic management. Toward the end we also discussed the role of general managers in the strategic management process.

1.12 KEY WORDS

Strategy: is a unified, comprehensive and integrated plan that relates the strategic advantage of the firm to the challenges of the environment.

Strategic Management: is a stream of decisions and actions which lead to the development of an effective strategy or strategies to help achieve corporate objectives.

Long Range Planning: focusses on forecasting the future by using economic and technical tools.

Strategic Analysis: is concerned with understanding the strategic situation of the organisation.

Strategic Choice: is concerned with the formulation of possible courses of action, their evaluation and the choice between them.

Strategy Implementation: is concerned with translation of general direction of strategy into action.

1.13 SELF-ASSESSMENT QUESTIONS

1) What is strategy and strategic management? Explain how strategic management is essential for organisation?
2) Explain how strategic management is different from operational management and long range planning?
3) What are various levels in an organisation at which a strategy may exist?
4) What are the elements of strategic management?
5) Describe the benefits of strategic management.
6) Explain role of a general manager in strategic management process.

1.14 FURTHER READINGS

Hatten, Kenneth and Hatten, Mary, 1988, *Effective Strategic Management: Analysis and Action*, Prentice-Hall: Englewood Cliffs.

Jaich, Lawarence R. and William F. Glueck, 1989, *Strategic Management and Business Policy*, McGraw-Hull Book Co.: Singapore.

Johnson, Gerry and Kevan Scholes, 1984, *Exploring Corporate Strategies*, Prentice-Hall International Inc.: London.

Paul, Samuel, 1983, *Strategic Management of Development Programmes*, International Labour Organisation: Geneva.

Rue, Leslie W., and Phyllis G. Holland, 1986, *Strategic Management: Concepts and Experience*, McGraw-Hill Book Co.: Singapore.

UNIT 2 ENVIRONMENTAL ANALYSIS

Objectives

After reading this unit you should be able to :

- understand what is Environmental Analysis and why is it needed
- identify the various types of environment
- explain the elements of general environment
- know the various groups who can influence the organisational environment and their interests
- enumerate the source of information about the environment.

Structure

2.1 INTRODUCTION

While it is important to determine whether the current strategy is working, it is also important to determine how the strategy will work in the likely future environment. The environment is the outside world; it encompasses everything outside the organisation. Hence, it is unlikely that we can be right about the future all the time and in every detail. Forecasts are needed to guide our actions and a logic is needed to guide our forecasting efforts.

Environmental Analysis is not simply extrapolation. We may expect a future like the past. But acting on this opinion requires judgement about the future. Thinking about the unthinkable and seeking new insights signify analysis rather than extrapolation.

2.2 WHY ENVIRONMENTAL ANALYSIS?

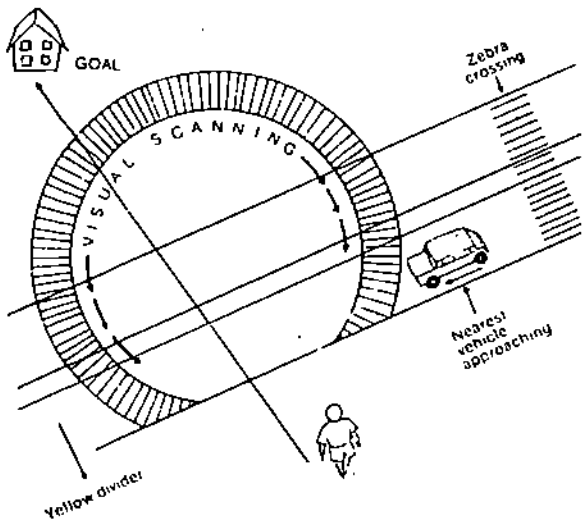
Managers must systematically analyse the environment, since environmental factors are primary influencers of strategy. Environmental analysis gives the strategic manager time to anticipate opportunities and to plan alternative responses to those opportunities. It also helps them to develop an early warning system to prevent threats or develop strategies which can turn a threat to the organisation's advantage.

In the last few decades, almost half of the 100 largest American firms went out of business or became significantly less important to the society due to their failure in anticipating environmental changes. Often companies become convinced that they are invincible and need not examine what is happening in the market place. If the company ceases to adjust itself to the environment by strategic change, the results would be reflected in less than satisfactory achievement of corporate objectives. Standard Chartered Bank is the oldest foreign bank operating in India, having been here since 1858. But it had clearly missed the bus in exploiting the opportunities that suddenly opened up for multinational banks in India in the eighties. Over the years, it had acquired the image of a standby player in a market dominated by aggressive competitors. It is evident that the bank could not understand its environment in advance. In an interview to "Business India", the Chief Executive Officer of the bank stated that "a lack of direction, a lack of focus and the absence of a clearer perception of business opportunities has left the bank behind."

Managers need to search the environment to determine (i) what factors in the environment present threats to the company's present strategy and accomplishment of objectives; and (ii) what factors in the environment present opportunities for a greater accomplishment of objectives through an adjustment in the company's strategy. Without systematic environmental search and diagnosis, the time pressures of managerial job can lead to inadequately thought out responses to environmental changes. Firms which do environmental analysis are more effective than those which don't. Successful firms do more and better analysis than the failing firms. The extent and sophistication of the analysis must meet the demands of the environment.

It is important to scan the environment, before the planning exercise is carried out. Environmental scanning is understood in simple words by an example where a boy has to cross a busy road in a metropolitan city in reaching a goal and he tries to have a visual scan, looks for an opportunity, which he may be able to use or not, analyses possible threats due to police, traffic speed or the risk situation in the middle of the road, and only then makes a strategy to cross. In other words he has to scan his entire environment, be it in terms of analysing the traffic density and speed, signal enforcement rules, and then do a kind of SWOT analysis including his own capacity before planning to cross. Even during implementation of his strategy, to cross the road, be it by going to the Zebra line and then crossing, to cross wherever he is standing (half and half) or else to cross blindly in one shot, he monitors the situation around and if necessary, reviews the strategy. Figure 2.1 shows the situation.

Figure 2.1



Objectives:		Information available
–Immediate:	To cross the road	–It is a metropolitan city
–Main :	To reach the Goal	–Road is busy.
		–There is a yellow divider
		–Time factor is important.

Source : PNB Monthly Review: December 1990

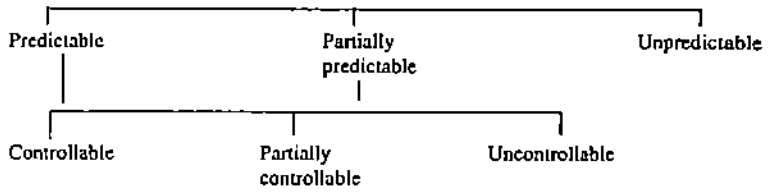
One could make a wrong/inadequate environmental scanning or over estimate his capacity. Again, if there are two people crossing together, coordination between the two becomes necessary as in absence of proper coordination one or both of them may get stuck.

Similarly organisations also have to carry out detailed environmental scanning before planning for their operations. As an organisation, we have to reach some specific goal and we have also certain capacity. SWOT analysis, therefore, becomes necessary in the planning process. And when there are number of people working in the organisation, suitable level of coordination and understanding is also equally important, lest each one may move in a different direction.

Apart from knowing the environment itself, the behaviour of the environment has also to be

understood as the response pattern will depend upon these behavioural situations. Figure 2.2 shown below gives different behaviour patterns.

Figure 2.2 : Behaviour of Environment



Source : PNB Monthly Review : December 1990

Depending upon the behaviour, reactions or responses from the organisation could be as under :

a) Reactive, i.e., to respond after something has happened
b) Inactive, i.e., no response at all
c) Preactive, i.e., to predict and prepare
d) Proactive, i.e., to influence the decision and plan accordingly

The primary responsibility for environmental analysis rests with the top management. If the firm is a multi-business firm, the responsibility is also shared by the heads of the strategic business units. Research staff usually help and advise top management. In banking organisations for instance, an economic research department at corporate level engages itself in knowing and scanning the environment, and also in understanding its influences. These departments which are given different names by different banks, advise the top management and the entire organisation about the environment and its changes and influences so that suitable strategies are drawn up and planning and implementation process set in motion. Even at the intermediary levels of management the zonal/regional managers and their planning and development managers carry out necessary economic, industrial and banking studies with a view to understand their relevant environment. Branch managers of banks in their own way, understand their command area of operation, devise suitable strategies for their business growth and give relevant feedback to the intermediate and corporate level of management. No systematic planning exercise, be it the annual planning and performance budgeting exercise, two year action plan or the long range plan process is possible unless a thorough scanning of the environment is made. Although there is as yet no perfect match between the macro level and micro level planning exercise but efforts are continuously made to ensure involvement and participation of all levels in the planning process.

We may conclude this section by quoting Eric Hoffer, a great American Philosopher. He said, "in a time of change, it is the learners who inherit the future. The learned find themselves equipped to live only in a world that no longer exists."

2.3 TYPES OF ENVIRONMENT

Environment can be classified as internal i.e., within the organisation and external i.e., environment in general. General environment can be viewed from different dimensions like socio-economic, cultural, technological, political and legal. The environmental analysis includes the study of all these dimensions and their interplay as well as impacts. Organisational environment includes dimensions relating to customers, suppliers, labour, competitors, and community. Let us study these two environments in detail.

2.4 GENERAL ENVIRONMENT

The general environment can be viewed from different angles. Some of these are socio-economic, cultural, technological and legal and regulatory environments. Let us, now, discuss each of these environments in some detail.

Economic Environment

There are a variety of economic factors which affect demand and supply for products and services and their prices.

The state of the economy at present and in the future can affect the fortunes and strategies of the firm. The specific factors that a firm would be interested to analyse are: the stage of the business cycle, inflationary or deflationary situation, monetary policies, fiscal policies, balance of payments, structure of industry, global competition, etc. Each of these factors of the economy can help or hinder the achievement of a firm's objectives and lead to success or failure of the strategy. For example, recession generally leads to unemployment which would ultimately result in reduction of sales. If the interest rates are increased, then the funds needed for investment may become costly. Corporate tax policies can encourage some firms for expansion, diversification, modernisation, etc. as Shri H.R. Patankar, the Chairman of Gujarat State Fertilisers Company Ltd. (GSFC), in his address at the 28th Annual General Meeting of the company stated:

> "Political and economic environment play an important role in the performance of any industrial unit, and this environment has been favourable. The budget for the fiscal year 1990-91 envisages welcome features such as reduction in corporate tax to 40%, rationalisation of tax structure in general, further liberalisation of the industrial licensing and controls announced through the new industrial policy which immensely reflects pragmatism, realism, innovativeness and boldness of leadership."

From the above statement we can say that the GSFC is considering the recent changes in the economic environment as an opportunity. Economic factors may be good for one industry and the same factors may be adverse to another industry. The influence of these factors may also change from firm to firm. Strategic manager must determine what factors are favourable to them and what are not. They should be able to predict the changes in these factors, that would have a significant impact on their operations.

Activity 1

Identify some recent changes made by the government in the economic and industrial policies. How these changes affected your organisation? Classify them as threats and opportunities.

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Natural Environment

Natural environment affects strategies. Positive climatic conditions may favour some firms. To support this we give the example of GSFC which is primarily in fertiliser industry. The Chairman stated: "Monsoon has also been kind and the excellent rains will give a boost to agricultural production and consequently to the sale of fertilisers". GSFC has also so far spent over Rs. 12 crores on different pollution control projects and this shows its concern about the ecological environment. The company Chairman further stated: "Your company is also considering to set up a Foundation for Environmental Research, Education Information and Eco-regeneration". All this is being done with a view to prepare the company to face the future environmental laws and the emerging needs.

Social Environment

The values and attitudes of people affect strategy. The following examples would illustrate the importance of social factors.

a) The Indonesian family planning programme recognised early that an important environmental barrier was the socio-cultural attitudes of people towards fertility control. The religious leaders opposed the programme.

b) For years most married women stayed home. Now, most of them are working. This has caused a problem to those firms which sell their goods from door-to-door. But it has also increased the business to restaurants, creches, prepared foods, readymade spices, etc.

c) In nuclear power plants, because of radioactive elements present, guidelines and procedures for decommissioning are stipulated, much in advance of actual

decommissioning, resulting in national and international criteria for radiation protection, transport and waste disposal and environmental safety during various stages of decommissioning. Since 1960, more than 65 reactors have been decommissioned the world over, and the accumulated experience is shared by all the member countries of the International Atomic Energy Agency (IAEA).

Technology Environment

Strategic managers also search for new and better technology that would increase the sales, reduce costs and improve the product. Changing technology can offer major opportunities for improvement and can eliminate major threats. Some examples of products which came into limelight because of technological developments are: word processors and electronic typewriters in place of manual and electric typewriters, fuel efficient two wheelers like Hero Honda, Kinetic Honda, etc. **The Illustrated Weekly of India**—one of the oldest news and features magazine — was converted into a broadsheet weekend publication by the last quarter of 1990. This is not out of choice but from compulsion. The weekly is printed on 50 years old machines that give excellent quality but little speed. As Pritish Nandy, Editor-in-Chief, of the weekly puts it "To keep ahead in the market, we must upgrade and change and make ourselves more technologically compatible with the times."

The National Dairy Development Board programme managers found in the eighties, that the technological improvements introduced by the Railways to facilitate long-distance haulage and refrigeration favoured the setting up of rural refrigerating plants away from the cities.

Technological advancement will affect the product life cycle also. Decrease in product life cycle results in increased profits. Technological change may also affect distribution methods, quality and types of raw materials, and the skills of the work force. Whether technological change comes fast or slow is a function of the creativity of people and entrepreneures, receptivity of the industry, and availability of finance for R&D activity and global changes. Not all sectors of the economy are likely to be equally affected by technological change. Some sector may be more prone to technological influences than others.

Activity 2

Find out whether your organisation has any technical collaboration with any other organisation, in India or abroad. If your answer is affirmative, find out the reasons for it.

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Legal/Regulatory Environment

This can also be called as political environment. Presently, the central, state and local governments of many countries are increasingly affecting the operations of almost all businesses. The governments may legislate on matters like wage and price control, safety and health at work, location of the plants, waste treatment, etc. Government policies about its relationship with business can change over time. With the change in government the policies of the firms and the complexion of threats and opportunities may also change. Hence, a strategic manager should also examine the legal and regulatory environment.

Sometimes the government may subsidise certain goods or give certain concessions to the firms which produce certain goods. These activities will encourage some firms to grow faster. The National Front Government in 1990 had extended several concessions to the Khadi and Village Industries Commission (KVIC) in the matter of excise and customs duties. Some 25 items were exempted from duties. It also proposed to exempt all KVIC products (including raw materials, machinery, tools and finished goods) from levies such as octroi and purchase tax. Sometimes the government, in public interest may impose certain restrictions on business which might creates problems for them. Some examples are :

Acting on a directive from the Ministry of Environment and Forests, the Electricity supply to the Leela Kempinski Hotel, a five star hotel in Goa, was cut off for alleged violations of

the Environment Protection Act (EPA). This action was taken under Section 5 of the EPA, which empowers the State to take punitive action against violaters of the Act. Action against the hotel was taken for their transgressing the rule which stipulates that no construction could be erected within 500 metres of the coastline at high tide.

Many companies in the Thane-Belapur industrial belt are awaiting anxiously for the clearance of the Department of Environment of Government of India for approval of their expansion plans.

As the Government policies could pose a threat or could become an opportunity, the firms must analyse the environment carefully.

Table 2.1 given below gives various variables for assessment of the environment for banks.

Table 2.1: Environmental scenario building for bankers

Social	Political	Economic	Technological
Poverty	Stability	Agricultural production	Rural technology
Inequality	Centre-state relations	Industrial production	Agricultural technology
Social structure	International relations	Energy	Manufacturing technology
Education	Type of politics	Inflation	Communication technology
Literacy	Ideology	Employment	Information technology
Population	Law & order	Balance of Payments	Transport technology
Labour movement		Savings Rate	Biotechnology
Health/medicare		Infrastructure	Management technology
Media		GNP	Transfer of technology
Caste/creed		Monetary & fiscal policy	
Values		Government borrowings	
Language		Deficit financing	

Source : PNB monthly Review: December, 1990

Activity 3

Identify any three political decisions recently made by the government which influenced the industry your organisation is in. How did your company responded to such decisions?

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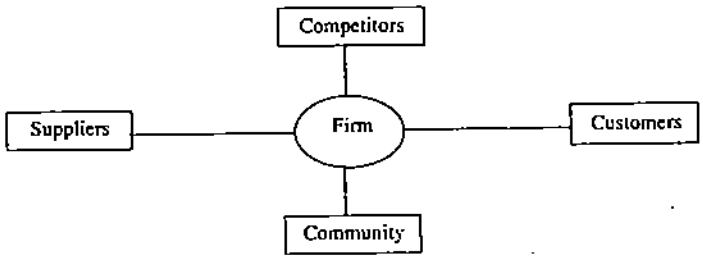
2.5 ORGANISATIONAL ENVIRONMENT

After discussing the general environment, now let us shift our discussion to organisational environment.

Organisational environment covers major groups or stakeholders who can influence the firm. A stakeholder is any individual or organisation whose behaviour can directly affect the firm's future but is not under the firm's control. These are: suppliers, customers, competitors and community. These groups have a stake in the firm, relationship with it, and interests in its operations. Figure 2.3 gives us a view of the stakeholders and their relationships.

Figure 2.3 : Stakeholders and their relationships



Customers

Strategic managers are concerned with who their customers are and their likes and dislikes. They should also be interested in finding out who are their potential customers and what their needs are. They should also be interested in meeting the needs of existing customers. Changes in the environment may lead to changes in customers' buying pattern. If the buying pattern is positive it will increase the sales, and if negative it will result in decline in the sales. In this area of analysis, the strategic manager explores three factors: Buyer identification, demographic factors, geographic factors.

Customers have needs, desires, requirements to be satisfied by the purchase of goods and services. Different customers have various reasons for interest in a product or service. It may be price, quality, credit, brand reputation, services, etc. These reasons may vary in importance, depending on the type of product. For example, a firm while buying its plant and machinery may be less concerned with price and more concerned with things like set up their quality, and maintenance costs. The same firm may be very much concerned with price while buying things like pens, papers, etc. Strategic managers should identify the nature of their customers and their utility in order to avoid losing them. This is also necessary to find or create new customers or sell more to existing ones.

The customers and their needs are not static and will be changing from time to time. Many a time, the changes in the general population would also affect the market for goods and services. As the total population changes the demand for goods and services also changes. For example, the population growth in developed countries like U.S.A. and Canada is declining whereas in the third world countries it is increasing. This may affect the firm's location strategy. Age of the population can also affect a firm's strategy. If the birth rate of a country is high and increasing, a firm which deals with baby foods may try to enter this market. Income of the population will also make a change in the customers. If the rate of growth in the middle income group is increasing there would be an increased demand for items like fans, pressure cookers, dining tables, scooters, etc. Those firms which are producing these types of goods will see this an opportunity. If there is an increase in higher income group growth rate, these very firms may consider it as a threat. This is because the customers would start moving to cars, air-conditioners, colour T.V. etc. Thus, the changes in the population could be threat as well as opportunities.

Geographic environment also creates threats and opportunities. So, an effective strategic manager should also consider the geography of the markets. The strategic manager would always search for better place for the expansion plans.

All the above factors will affect the customer sector. Hence, customer analysis is very important.

Suppliers

Suppliers to a firm can be of capital, labour, equipment, material, etc. As the suppliers are concerned with most of the factors of production, they are a crucial group. The strategic manager is concerned with the cost, availability and possible changes of the factors of production. The power relationships between the firm and the supplier will decide many things. If the supplier is free from competition, he can increase the price and thereby can reduce the firm's profits. On the other hand if the firm is buying a major portion of the production, then the firm can affect the cost of supplies.

In addition to the concern for the cost and raw material availability, a strategic manager should also search the environment to analyse the long-term trends in the availability and cost of materials as well as their substitutes. He should also search for alternative low cost

material to the present raw materials. The supply, cost and reliabilities of sources of energy would also affect the firm. The recent patrol and power cut led many companies to reduce their production. The strategic manager should be able to analyse and predict the environment and to plan for alternative arrangements.

Strategic manager should also be aware of conditions in the money market and their effect on the present strategies. The cost or the availability of capital can limit a firm's strategic options. Besides, the changed position with regard to availability of the required labour may affect the strategies. If the firm's labour needs mismatch with the supply of labour, the result could be disastrous. Cost of labour also effects the firm's strategies.

Activity 4

identify the various suppliers who supply raw materials, spares, etc., to your organisation.

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Competitors

Competitive analysis and competing go hand in hand. It is virtually impossible to be an effective competitor unless the firm has a good understanding of its competitors' objectives, strategies, perceptions and resources. Without knowing who are the competitors and what are they doing, the firm is bound to be vulnerable to the competitors sooner or later. The essence of competition is to focus on the strengths against the weakness. Competition places strategy against strategy. The firm must be able to move faster than its competitors. Before a company seizes an advantage or avoids a danger, it should consider the dangers in the opportunity and advantages in the threats.

The objective of business competition is not so much to damage the competitor's market share with a view to dominate as it is to understand the market. A firm has to understand its own role in the market and the pressures that affect its position. The strategic manager should also keep his eyes open regarding the environmental changes that may arise due to entry and exit of major competitions. In both the cases the company should change its strategies suitably. If a new firm enters into the market then the firm's strategy may be amended so as to keep the present market share. If an old firm exits then the firm may change its strategy so as to increase its market share. Entry and exit are not easy things particularly in a developing and protected economy. Entry or exit of the firm depends on the barriers to entry and exit. Another important factor that affects competition is the availability or otherwise of substitutes.

There are two types of substitutes which concerns a strategic manager i.e., substitutes to raw material and substitutes to the finished goods. If the strategic manager fails to identify the substitutes to raw material, the cost of production will remain the same. But the competitors who could identify these substitutes will produce the same goods with a lesser cost and thereby increase their profits and this may be at the cost of the firm.

Substitutes to the finished goods may much more dangerous to the firm. Substitutes may be cheaper and better than the original product and thereby they may attract more customers. If the firm cannot meet this challenge with suitable strategies, it may be compelled to abondon business.

Activity 5

a) List out the major competitors to your company and also identify the strengths and weaknesses of your company vis-a-vis the competitors.

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b) Identify the substitutes available to your company's raw materials and also finished products.

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Community

Besides the above three is a fourth group of stakeholders which is relatively new but an upcoming factor, that is the society or community.

The society is insisting that business should do more than just make profits. These pressures are arising from a variety of sources :

1) Voluntary agencies and social activists are demanding that commercial enterprises show a concern for broader societal impact of their activities.

2) Independent watchdogs are forcing management bodies to take greater cognisance of customers and their needs.

3) Executives generally desire to have an image of social responsibility, both as individual citizens and as members of the corporation.

Activity 6

Meet the Public Relations Manager of your organisation and ascertain the facilities your company is providing to the immediate community around.

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2.6 SOURCES OF ENVIRONMENTAL INFORMATION

After discussing about the need for and dimensions of environment, the question before us is how to analyse the environment? This analysis is done by means of a search of verbal and written information, intelligence work, forecasting and formal studies, and information systems.

The first approach is the verbal information gathering. This information gathering can be internal or external. It can also be informal or formal. The main source of this is media like radio and television, employees, and outsiders. The outsiders could include—customers, middle men, suppliers, competitors and their employees, financial advisers like banks and consultants, government and university employees.

The written or documentary information is from sources such as newspapers, trade journals, industry news letters, data bases, subscriber research services and general publications. In some firms top managers subscribe to clipping services, which search periodicals and papers and summarise the information for them. The balance sheets of the competitors' is another valuable source. Another solution is to design a management information system to bring the information from all sources to the strategic managers.

Industrial intelligence work is another method used to gather information about potential or actual competitors, on their trade secrets, cost of production, management strategies, etc. The source could be an employee of the competitor, one of the suppliers or customers of the competitor or a professional intelligence agency. Although it varies by industry and functional areas, industrial intelligence work appears to be increasing.

Yet another way to analyse the environment is formal forecasting. Normally, it is performed by the corporate planners or other staff personnel or consultants at the request of top management. There are certain groups of consultants who have specialised in this. Also there are a few journal which deal with this subject.

There are a number of techniques for forecasting. All the factors in the environment are subjected to forecasting. Some among them may be forecasted successfully. Besides the individual firms, the government is also participating in the forecasting of various factors. One among them is technology forecasting. For this purpose the Government of India has established Technology Information, Forecasting and Assessment Council (TIFAC). Technology Commission, Directorates of Economics and Statics and Research Bureaus also undertake periodic forecasting. Opinion surveys is another method of analysing. The company's market research department may provide important pieces of environmental information.

2.7 ENVIRONMENT—STRATEGY INTERFACE

Strategic managers view the impact of their environment in different ways. Some may see ambiguity (uncertainty) as threat and some other may see it as an opportunity. While some may be reactive in responding to changes, other may be proactive. They may make choices about which parts of the environment can be changed and then seek to set up an appropriate strategy. For example, some firms review the research in the technological sector and then move their labs in the direction the technology appears to be moving.

Strategic responses to environmental threats can vary significantly. Sometimes, there is enough time to respond to an environmental change, and even influence the nature of the change. The environmental analysis should be conducted in such a manner that it can detect changes occurring even outside the traditional view of its industry. Past strategies are relatively difficult to change even in times of significant competitive threats.

It is also to be noted that the environmental assessment is a critical process and the internal conditions may vary and consequently constrain the very usefulness of this process. Firms may look at the environment in a variety of ways. The strategic choice about how to deal with the environment allow for substantial discretion to managers.

2.8 SUMMARY

Managers do not like surprises and they don't like to be caught unawares. Hence, they have to develop an understanding of the environment which is a source of their surprises and uncertainties and should be able to use this understanding while making decisions. The purpose of the environmental analysis is to understand the forces that affect the organisation's performance. These forces can be broadly classified as general and the organisational. General environment includes changes in natural, socio-economic, political, and technological fronts. Organisational forces or the stakeholders' pressures include the values and objectives of the pressure groups like competitors, suppliers, customers and the community. Unless a strategic manager understands the pressures and powers of all these forces he cannot make appropriate strategic decisions for the uncertain future.

2.9 KEY WORDS

Environment : those forces outside the organisation which create opportunities for and constraints on the organisation and its growth.

General Environment : includes broad trends which are felt in many industries and which are not usually amenable to influence by a given organisation.

Organisational Environment : includes organisations and forces which interact with the organisation and its industry directly.

Stakeholder : is an individual or organisation whose behaviour can directly affect the firm's future but is not directly under the control of the firm.

2.10 SELF-ASSESSMENT QUESTIONS

1) Explain the term "Environment" and discuss why environmental analysis is necessary in strategic management?

2) Identify the various environments that affect the management of an organisation. Also discuss the impact of general environment on the organisations.

3) What are the various groups that influence the strategies of the organisation and what role do they have in strategic management? Explain with suitable examples.

4) Where do you get information for the purpose of analysing environment and how is it useful in strategy formulation?

5) Explain with examples the interface between the environment and strategy.

2.11 FURTHER READINGS

Jauch, Lawarence R., and William F. Glueck, 1989, *Strategic Management and Business Policy*, McGraw-Hill Book Co: Singapore.

Johnson, Gerry and Kevan Scholes, 1984, *Exploring Corporate Strategies*, Prentice-Hall International Inc., London.

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APPENDIX-I

SOCIO-ECONOMIC ENVIRONMENT OF THE PETROCHEMICAL INDUSTRY FORECAST TO 2000 A.D.

1. THE NEED FOR SOCIO-ECONOMIC FORECASTING

Technologies desirable for the future growth of the petrochemical industry cannot be forecasted confidently without considering the future state of society within which they must operate. Technologies produce outputs that impact and alter society and is in turn, controlled, shaped and altered by society. It is therefore quite obvious then that technological forecasting cannot be done in a secular, autonomous manner. It needs to be done within a socio-economic context. The social situation, needs and priorities of the economy will determine in a large way the appropriateness of the technology forecast.

Socio-economic forecast therefore is a prerequisite for an effective technological forecast. The forecast of the socio-economic state is far more complex than the forecast of technology. Secondly, because of the interactive nature of technology and society, forecasts of both the future state of technology and the society within which it is embedded ideally, should be done simultaneously.

2. APPROACHES TO SOCIO-ECONOMIC FORECASTING

There are two general analytical approaches to forecasting future societal states. The first approach involves projection of social indicators or other important social parameters. Social indicators projections typically develop only the skeletal outlines of a future state. The first step in this approach is to select long-term societal trends. These trends might represent changes in societal norms, and value preferences, governmental regulations and institutional structures or demand for the goods and services produced. Next, the trends are extrapolated. The trends are then augmented by considering possible future high impact events.

The second approach to forecasting future societal states is scenario building. A scenario is a descriptive sketch or a chronological outline of a possible future state of society. It attempts to produce a holistic view of the social context as it relates to the technology being assessed. It seeks to define the major contextual elements and to depict their relationship to one another. Forecasts usually present a set of alternate scenarios, generally between two and six. There is a particularly popular one, allowing for two extremes and a most likely in between.

The scenario building exercise is very relevant to the forecasting of the socio-economic environment of the petrochemical industry because of its ability to indicate the sensitive and insensitive areas and to aid effective planning.

3. ANALYSIS OF THE SOCIO-ECONOMIC INDICATORS AND THEIR TRENDS

3.1 Relevant socio-economic indicators

There are certain factors that tend to have a direct influence on the state of the society. The factors of relevance are the demographic factors, agriculture, lifestyles, industry, transportation, Government Policy and the international environment.

The above factors would play a very important role in determining the likely scenarios of the socio-economic environment of the petrochemical industry. For example, demographic characteristics will determine the usage rate of the petrochemical end products. Government policies can help regulate and promote the demand for products of the petrochemical industry through its fiscal mechanisms, liberal import duties and protectionist measures. There is a strong corelation between consumption of petrochemical end products and the lifestyles or standard of living, especially in the case of plastics, fibres, elastomers, and surfactants. Innovations and developments in the field of agriculture have a direct effect on the use of plastics for canal linings to conserve water which is a scarce resource for the farmers. Changes in the rate of production of cotton and rubber will have its indirect effect on the consumption of synthetic fibres and rubbers and hence on the projected demand for these products. Similarly, scarcity or depletion of natural resources (metals, forests etc.) will give rise to new or substitution demand for petrochemicals.

3.2 Analysis of the socio-economic indicators and their trends

3.2.1 Demographic characteristics:

The population recorded an annual growth rate of 2.25% in the decade 1971-1981. This is to be compared with a growth rate of 2.22% between 1961 and 1971. In the two decades between 1961 and 1971 there was an almost constant fertility rate and a perceptible decline in mortality rate but in the decade 1971-1981 there was a decline both in fertility and in mortality. The trend of socio-economic indicators pertaining to the demographic characteristics are given below in Table II.1.

Table-II.1
Trends in Demographic Characteristics

Year / Socio-economic indicators	1970-71	1980-81	1984-85
1. Population growth rate (%)	2.24	2.26	N.A.
2. Population distribution			
a) below 15 years (%)	42%	40%	38%
b) above 15 years (%)	58%	60%	62%
3. Life expectancy in terms of years			
Male	46	51	56.1
Female	45	50	57.0
4. Urbanization (%)	19.9	23.7	24.7
5. Employment (million standard person years)	N.A.	151	187

Source : Centre for Monitoring Indian Economy (CMIE), Bombay, August, 1986.

3.2.2 Agriculture

Although agriculture continues to be a major production sector, its share in the gross domestic product (GDP) declined from 59% during 1951-56 to 38.2% during 1980-84. Despite the fall in its share of national income, agriculture including dairy, poultry, farming, fisheries, etc. Still employs nearly 70% of the working population, a fall of only about 5% over the past three decades of planned economic development. The trends in growth of the agriculture sector are given below in Table II.2

Table-II.2
Trends in Growth of Agriculture

Year / Indicators	1970-71	1980-81	1984-85
1. Share of agriculture in GDP(%)	49.2	39.2	34.5
2. Growth rate in agricultural production (%)	2.3	2.5	2.6

Source : CMIE, August, 1986.

3.2.3 Lifestyles

Trends in life styles are given below:

Table-II.3
Trends in Lifestyle Characteristics

Year / Indicators	1970-71	1980-81	1984-85
1. Percapita consumption (84-85 prices)	370	709	979
2. Percentage of people below poverty line %	60	50	37.0
3. Per capita consumption of cloth in metres	15.6	14.7	16.16
4. Per capita generation of electricity (KWH)	110	174	226

Source : CMIE, August, 1986.

3.2.4 Industry

Sectorally, the projected annual rates of growth and their contribution to GDP growth are as follows:

Table-II.4
Annual Compound Growth Rate

Sector	During	Share in GDP			
	1984-85 to 1989-90	1989-90 to 1999-2000	1984-'85	1989-'90	1999-2000
Agriculture	2.5	2.4	36.9	32.7	25.5
Mining	11.7	3.5	3.5	4.8	3.8
Manufacturing	5.5	7.8	14.6	15.0	19.8
Electricity gas & water supply	7.7	7.9	2.0	2.3	2.9
Construction	4.8	4.9	6.2	6.2	6.1
Transport	7.1	5.3	5.6	6.2	6.4

Source : Planning Commission, 1984

On the industrial horizon of 2000 and beyond the following trends are indicative.

a) small scale industry will remain an integral segment of manufacturing and its steady growth is to be ensured.

b) an average annual industrial growth of 8-9% is projected attributable largely to a rapid increase in output of petrochemicals, fertilisers, aluminium, electronics, telecommunications equipment and computers.

c) thrust in accelerated industrialization would be towards mass consumption goods and export-oriented industries.

4. SCENARIOS

Three scenarios have been presented for the year 2000 A.D. These scenarios are basically a reflection of the likely trends of the socio-economic and political indicators of the economy.

4.1 Scenario I (Low growth scenario)

The scenario envisages a high growth rate of population around 2.2% , a low growth rate of national income and a low growth of urbanization. There will be a drastic fall in the purchasing power with deleterious effects on trade and industry. A substantial proportion of people (45%) will be below the poverty line. Agriculture would grow at a low rate, around 4%. This low rate could be attributed to low rate of technology adaptation, reduced use of fertilisers, and high dependence on monsoons. Low growth in housing would be due to inadequate income level of the masses, high cost of building materials and reduced incentives from the government. Technologically, India would be further hampered by lack of capital, resistance from the unions for automation and inability to meet the demands of the competitive environment due to lack of management practices. The low projection of 4% is attributed to low growth rate of industry, lack of finance to support infrastructural development and a rural based economy. Low growth rate of urbanization is attributed to low growth rate of industry. The low growth rate of industrial activity would be attributed to power shortages, constraints of capital, fall in productivity of labour, scarcity of cost effective inputs and low purchasing power of the masses.

4.2 Scenario II (Normal growth scenario)

This scenario assumes a marginal change in the growth rate of population, higher income levels and a higher degree of urbanization. There would be atleast 30% below the poverty line. This would be due to unequal distribution of wealth and inadequate stress on poverty alleviation programme. Higher consumption expenditure could be attributed to high degree of urbanization, changing lifestyles and improved standard of living. Agricultural output is expected to grow at a rate of 5% due to increased use of fertilisers and higher yielding varieties. Urbanization is expected to increase to 30%. This would be due to growth of industry, semi-urban based economy backed up by spatial dispersion of critical economic activities leading to migration of people to semi-urban and urban areas. Moderate growth of industrial production is attributed to slow growth in domestic demand, higher prices of inputs, power shortages.

4.3 Scenario III (High growth scenario)

This scenario assumes a drastic reduction in the growth rate of population which is attributed to higher income levels, high growth of urbanization and a committed and well organized family planning programme. The percentage of people below the poverty level is expected to decline to 10% by 2000 A.D. Agricultural output would grow at the rate of 6% due to increased use of modern agricultural practices, better use of fertilisers, high yielding varieties, and increased irrigation facilities. The overall growth rate of industrial production is expected to thouch 9% by 2000 A.D. This would be made possible by an increased domestic demand due to higer standards of living, lower incidence of poverty, and higher purchasing power of the masses, especially in rural and semi-urban areas.

There is likely to be a more sophisticated lifestyle, higher standard of living, more community involvement and participation in the development programme, a more urban based economy backed up by strong agricultural linkages and industrial growth.

Table II.5 provides at a glance the scenarios in quantitative and qualitative terms:

Table-II.5
Scenarios for the year 2000 A.D.

Scenarios Socio-economic indicators	Scenario I	Scenario II	Scenario III
1. Population (Million people)	1020	1000	975
2. National income in crores (84-85 prices)	300,000	350,000	400,000
3. Income distribution (% of people below poverty line)	46	30	10
4. Output in Agriculture (million tonnes) (includes only foodgrains, rubber, sugarcane, oilseeds)	800	900	1000
5. Output in industry (crores of rupees)	60,000	80,000	100,000
6. Output in housing (crores of rupees)	15,000	17,000	20,000
7. Output on clothing (million metres)	175	200	245
8. Output on transportation (crores of rupees)	30,000	35,000	40,000
9. Output projections on services (in crores of rupees)	90,000	110,000	140,000
10. Urbanization %	25	30	35
11. Household consumption expenditure (crores of rupees) 84-85 prices	250,000	300,000	350,000
12. Life Style			
a) Consumption behaviour	Low	Moderate	High
b) Housing	Low cost	Moderate	High cost
c) Geographical living patterns	Rural	Semi-urban	Urban
d) Transportation demand	Low	Moderate	High
13. Government Policy	Restricted	Moderate	Liberal

5. IMPLICATIONS FOR ACTION

In India, growth of the petrochemical industry, though of recent origin (in 1966), has been quite fast. In comparison to rise of the index of total industrial production from 100 to 193.6 during 1970-71 to 1984-85, index of petrochemicals production increased to 368.6 during the same period.

Demand projections for Thermoplastics and rubber in India made by the Planning Commission, ICMA, IPCL and the Apex Committee could be correlated with the low growth, normal growth and high growth scenarios respectively. What does seem likely from the demand projections is a mix between the normal growth and the high growth scenario.

The basic strength of Petrochemicals is that there are no new substitutes in sight. Consequently, they are not likely to suffer the problem of such basic industries as steel and timber. Realism dictates however that any growth in demand will be moderate compared to the past.

5.1 Demand Forecasting

Detailed exercises on optimum size of plants with sensitivity analysis of feedstock/product cost variation has been done to serve as a useful reference point to the industry. A prerequisite for the exercise is a reliable estimate of demand by year 2000 A.D., based on a combination of ICMA IPCL and Apex Committee projections pertaining to plastics, fibres, elastomers. This exercise will also have to project the demand-supply balance of ethylene and propylene in the country based on the end products desired from which the investment, manpower, energy and technology needs of the petrochemical industry can be determined. An applicationwise demand forecast may help draw out a much more reliable forecast for the major product groups of the petrochemical industry.

5.2 Marketing and Technology Development

The time has come to rationalize or rather restructure distribution channels to facilitate convenience and service to customers. Down stream industries need to be developed on a massive scale to facilitate seepage of process and

end product technology. The industry should be in constant touch with the needs of the market and technological developments in order to successfully develop an indigenous capacity to meet the demands of the ever-growing segments of the population.The thrust should be on R & D management, environmental menagement and energy conservation to boost the petrochemical industry into serving the needs of the country.

5.3 Policy Planning

The competition in the Petrochemical industry is expected to remain moderate because of the following reasons:

a) Large capital investment precludes the entry of small and medium sized organizations.

b) Economies of scale reinforces the above argument.

c) Uncertainty in the availability of appropriate feedstocks.

d) Government control in terms of licensing

e) Market for petrochemical products is still not well developed and market development costs are high.

f) Basic process technology has to be imported and associated investment for selection, adaption and assimilation of technology is substantial.

With likely continuation of resource constraints in terms of raw material, finance for investment, and purchasing power by 2000 A.D., Government policy has to be both restrictive and nurturing simultaneously. Thus the Government Policy should encourage competition and be developmental.

6. SOCIO-ECONOMIC ENVIRONMENT AND TECHNOLOGY PLANNING

The three scenarios of the socio-economic environment correspond to the demand/supply projections, choice of technology issues and the implemenation structure. While the Scenario 3 (High growth) is seen by many experts as a likely and desirable one, we have developed technological strategies and policy options that are robust under all the three scenarios. The technological priorities for all product groups are divided into **R & D strategies** (based on distant demand, frontier nature, high risk, uncertainty of outcomes, monopoly nature of present technology, self-reliance or strategic importance) and **Import/Investment strategies** (based on immediate demand, high cost and long lead time for R & D in the area, economies of scale and easy availability of imports). National needs and other environmental factors derived from the scenarios have been kept in mind while developing these strategies.

Source : A study coordinated by prof. R.S. Ganapathy of IIMA and Dr S.K. Awasthi of IPCL, entitled "Technology Planning for Petrochemicals".

UNIT 3 STRATEGIC MANAGEMENT PROCESS

Objectives

After reading this unit, you should be able to:

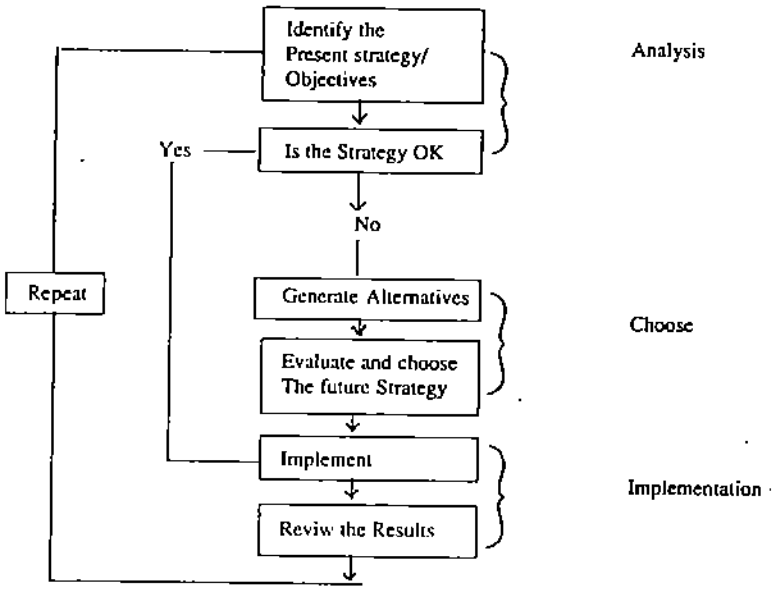
- explain what is the strategic management process
- identify various steps in strategic management process.

Structure

3.1 INTRODUCTION

After discussing the meaning of strategic management and the effect of environment on the strategies, let us now proceed to the process of strategic management. Strategic management process can be described as a set of managerial decisions and actions which determines the long run direction and performance of the organisation. Setting the organisational mission, developing the objectives based on the mission, developing and implementing the strategies to achieve the objectives, measuring the achievements and adjusting the strategies to the organisational needs are all involved in the strategic management process. The entire process of strategic management can be shown in a diagram for better understanding.

Figure 3.1: Strategic Management Process



From the above diagram we can identify the following steps in the strategic management process.

1) Identify the present strategy/objectives
2) Evaluate the present strategy
3) Generate alternatives

4) Evaluate and choose the strategy for future
5) Implement the chosen strategy
6) Review the results to get the feedback

The first two steps form the strategic analysis element, the next two fall into strategic choice element and the last two come under strategic implementation.

Almost all organisations are engaged in strategic management process either formally or informally. Organisations that consciously engage in strategic management generally follow formal process and the rest follow informal approach. Informal approach does not mean that the organisation does not know what it is doing. It only means that the organisation will not put any efforts to initiate and manage the strategy. It is also possible that many companies may not be aware of the strategies which are responsible for their success. This may sometimes lead to failure of the same company when it attempts to go for corporate acquisition, or product diversification, or market expansion. Hence, the formality of the process is quite important. A formal strategic management process will generally follow the above mentioned six steps. Now, let us discuss these steps in detail.

3.2 IDENTIFYING THE CURRENT STRATEGY AND OBJECTIVES

To reach any destination it is very much needed to know where we are. Similarly to formulate a strategy, we should know what the present strategy is and what the firm's objectives are. There always exists a current strategy, though explicit. It is a summary of what the firm is doing currently. The objectives are what the firm is hoping to do. Managers have to make decisions to get results. Even if they are ignorant of the strategy they are following, it can be inferred from their actions, decisions and commitments. There is another reason for learning the strategy identification. That is to identify and understand the competitors' strategy.

If organisations state their strategies clearly and explicitly, identifying strategy would be easy for most people. But this happens very rarely. A strategy must be discovered from the practices of the organisations. That is by looking at what people are doing at the functional level. We may call this as functional analysis. First step in this analysis is to develop a description of what the company is doing in each of its functional areas like marketing, production, finances, human resources management. Then the objectives of each function have to be identified and also relationships among the functions and sub-functions have to be analysed. This process helps us to know the important elements of each of the functional areas and provides insight into the firm's current strategy, and its strengths and weaknesses. Let us see, now, how functional actions reveal business strategy.

To describe a firm's marketing strategy one should identify the firm's present market and its views on the customers and the potential markets for its products. A firm can analyse the elements of its activities in areas like place (distribution), price of products, promotion. Market strategy of the firm will be clear if we examine the firm's activities in each of these areas.

It is very much useful to know how a firm's product or service is sourced, produced and delivered. This is because control of a major source of raw material or a unique process may provide cost, quality, or reliability/advantage to the firm. Analysis of the firm's activities in all these areas will give a picture of production strategy.

A company's sources and uses of funds reveal its financial strategy. Funds from operations, debt and equity are the principal sources of funding for most organisations. The proportions of these sources will decide the state of each of these groups in the firm and where the firm can get funds in future. The different proportions of these sources of funds will give benefit to the firms at different situations and at different times. The financial strategy tells about the firm's ability to change direction or its flexibility. Deployment of assets speaks about what the management thinks of the firm's future. For example if the firm commits its resources heavily on fixed assets, it signifies the confidence of the firm in its future demand.

Managers do not do everything themselves. They design structures and systems and employ

people to manage the firm's resources and produce the results as per the company's objectives and strategies. Human resource strategy is concerned with the ways the managers work through others to get things done, Since human resource is the only resource which has the potential to generate virtually limitless returns and the strategies relating to this plays an important role in the overall business strategy, managerial time spent on human resource problems is particularly revealing of the strategy followed by the firm.

Business strategy coordinates the actions of the firm in the market and uses the functions to relate the firm to its environment. Interconnections and interrelationship among the functions reveal the important elements of business strategy. Functional objectives are one of the most important connections. Identification of the functional interrelationship should also help us in identifying the firm's distinctive competence and it also helps in developing the ways of achieving competitive advantage by leveraging the firm's competence with other resources.

Activity 1
Identify the objective of an organisation of your choice and find out the strategies formulated to achieve those objectives.

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3.3 EVALUATION OF STRATEGY

After identifying the current strategy, it should be evaluated in the internal and external contexts. Evaluating a strategy means evaluating its results in the past, present and the probable future. Every organisation reaches its future by moving from the past through the present. Before the management can recommit or change its present strategy, it should anticipate the future results of the current strategy in the light of the past experience. The strategies are evaluated by examining their present or expected results in relation to the firm's resources, its internal environment, and the interests of its shareholders. External factors like socio-economic, political, legal, environmental etc., will also influence the strategies. The future changes in these should also be kept in mind while evaluating the strategies. The discussion in this section would be mainly on the importance of resources, environment and the interests of stakeholders in the evaluation.

Evaluating the strategies with respect to the **resources** available is very essential. This evaluation brings out the competencies, strengths, and weaknesses of the firm. Resources which have a positive effect on the performance of the firm are strengths and those which have negative effect are weaknesses. For example a strong brand name will be a strength to launch a new product whereas bad relations with the distributors is a weakness. Resources can be identified either with functions or with the businesses (if the firm is a multi-business one). Resources are the results of the past. Resources come from the past and the strategy evaluation is on the future. Resources link the past and future.

The second factor which should be considered while evaluating the strategy is **environment**. By environment, here, we mean the outside world. It covers everything outside the firm. It is very unlikely that the predictions about the future would be right. We have to forecast the future and act as per the forecasts. Forecasts, of course, should be based on logical conclusions. The factors responsible for environment can be of two types—
i) factors which influence environment relevant to the firm—like the industry in which the firm is, suppliers, customers and competitors of the firm, their power and impact on the firm, strategy, etc.; and ii) the factors which influence the macro or general environments like socio-political, economic, etc. Environmental assessment does not simply mean environmental extrapolation. It is a thinking about the unthinkable and seeking new insights. It is better to assess the environment in advance so that there would be sufficient time to meet the changing new demands. (Please see Unit 2 for more detailed discussion on Environmental Analysis.)

Sometimes, plans which are considered to be logical, pre-emptive and efficient in using the resources and are almost certain to succeed in the future environment, do not work. This is because the objectives or strategies could not win support of the people. Organisation means people, not machines and materials. People have a stake in their organisations. Both internal and external stakeholders in an organisation have values which influence their personal as well as organisation's objectives. These values and objectives will be changing from time to time. When the organisation's objectives or strategies change, it is necessary to accommodate the changes in the stakeholders' values and objectives and evaluate the revised strategies against the changed values of the stakeholders.

As the stakeholders' support is necessary to make strategy a success, their management is very essential. In this process an organisation should, first, identify the interests and powers of the stakeholders. Then the organisation should recognise their ongoing and changing values, objectives and powers. In the light of the information collected from these activities, the management should make suitable changes in the future strategy.

After analysing the strategy against resources, environment and the objectives of stakeholders, one should judge whether the strategy is working or not and it would continue to work in future also or not. If the management feels that the strategy can work well in future also, then the same be continued and here ends the strategic management process. If the management feels that the strategy needs revision, then the process continues and comes to the next stage, that is generating alternatives.

Activity 2
Try to identify strategies of your work area and evaluate their validity for the future, keeping the future resources and environment in view.

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3.4 GENERATING ALTERNATIVES

With the strategic evaluation stage, the element of strategic analysis ends. If the strategy is perfect, there ends the strategic management process, otherwise the process continues and enters the strategic choice phase. In strategic choice phase, there are two stages: generating alternative choices and evaluating these choices to select the final strategy for future.

Strategy evaluation provides an opportunity to understand how the strategy is working and what needs to be done to make it better. This also gives a reasonable time to prepare for future situations or changes. Evaluation tells the firm what is not working and what is working and also alters the firm to make the necessary modifications in its objectives to meet the likely future course of events.

The major job of management is not problem solving. Management should define and try to achieve the objectives to enhance the value of the organisations. Hence, strategic managers should be choosy in selecting the problems that are identified in the strategic anlaysis and attempt to solve only those problems which need attention and which can take the organisation a long way towards its objectives.

The process of generating alternatives is a delicate one. If alternatives are more, there is a likelihood of generating good-quality solutions. The alternatives broadly fall under these heads: alternatives which argue for status quo, alternatives which aim at raising revenues or lowering the costs, alternatives which can alter the stakeholders' power and objectives, and alternatives which come through unconventional wisdom. Each of these types of strategic alternatives holds a number of actions open to the strategic manager. An elaborate list of actions would increase the quality of alternatives.

Among them the alternatives for raising the revenue or lowering the costs, are very

important. This can be achieved through two ways—generic strategic alternatives which emphasise on one or two variables, and standardised strategic options like liquidation, integration and diversification. An organisation might choose between a change in the present strategy or no change. If it decides to change, the change could include partial liquidation or total liquidation with a view to specialise in one particular industry. It could sometimes go for even diversification.

Liquidation means leaving a business or product sector. This is possible through two methods—harvest and divest. Harvest is the slower process of liquidating in which the business continues to function but in a contracting way. Here, no further investment is made and the existing resources are gradually removed. Divestment is a single-step liquidation. Here, the business or firm will be sold to somebody and there ends the liquidation. Liquidation is usually seen as a result of poor business performance. But, in fact, it only means that a firm finds some other attractive areas. The firm may divest the resources from lesser attractive areas or activities to exploit these new opportunities. Afterall, any liquidation would have to finally result in the overall improvement of the organisation's performance.

ntegration is a growth strategy which involves extending an organisation's present business in two possible directions—forward and backward. By forward integration we mean the organisation moving into distribution of its own products or services. On the other hand, in backward integration an organisation moves into the supply of some or all of the products or services that are used for the production of its present products or services. To give an example, IGNOU is buying blank audio/video cassettes from the market and produces the audio/video programmes for its courses. The university has authorised ET&T Corporation to distribute its programmes. Now, if the university decides to distribute its audio/video programmes on its own that becomes forward integration. Alternatively, if the university decides to produce blank audio/video cassettes for its consumption that becomes backward integration. Integration can be a reasonable and rational strategy in certain situations like—when the organisation wants more control over the costs, quality of raw materials, or the suppliers/producers of the raw material have large profit margin, or the organisation wants more control over the sales and distribution channels, or the profit margins of the distributors are very high, and/or the organisation wants to increase its power and size. It is to be noted that generally, the objective of forward integration is to control the price front whereas the objective in backward integration is to control the costs. There is one more way of integration strategy, that is a growth strategy which involves buying of one or few of the firm's competitors. We can call this as horizontal intergration.

Diversification is also a growth strategy which involves adding new products or services that are different from the existing products or services. Some of the examples for this are—ITC going for Agro-based products, Brooke Bond going for Spices, India Today going for classical music audio cassettes, etc. This is a very common strategy that many firms adopt. These can be pursued internally, like TVS group producing many types of two wheelers or externally like, again, the TVS group entering into electronics goods. Some of the reasons for diversifying are—to satisfy the values and objectives of the company and the owners, taking advantage of unusually attractive growth opportunities, distributing risk by serving several different markets, increasing the price of stock of the company, etc. Diversification brings all the problems that are associated with the bigness. Hence, an organisation should go for diversification only when it is really beneficial.

Generating alternatives is not just the responsibility of top management, but of all levels of management. All the levels of management have roles to play and should contribute to alternatives generation.

Activity 3

Select any one of the generic strategic alternatives of your organisation and explain how it was considered best to meet the particular situation that arose.

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3.5 EVALUATING ALTERNATIVES AND CHOOSING THE STRATEGY

Evaluating alternatives is almost similar to evaluating the organisation's strategy in the sense that each of alternatives generated should be tested against the organisation's resources, environment and the stakeholders' values and objectives. An organisation will not have historical data for evaluating alternatives unlike strategy evaluation. Hence, the evaluation of alternatives is more risky and uncertain. An organisation may miss an opportunity by not reviewing its strategy. But, if the organisation chooses a wrong alternative strategy, it may cost the firm and its stakeholders very heavily. Sometimes, the firm may have to forego all its resources and the gains from the earlier strategies also. While evaluating, the firm should keep in mind certain things like the uncertainty, information gaps, and chances of the competitors being well informed than the firm. Uncertainty, information gaps and opportunities go together. Uncertainty leads to errors and errors to opportunities. Problems are the gateways to progress and alternatives are keys to opportunities. Organisations should be ready to face the uncertainty and cope up with it.

Uncertainty may not be completely eliminated but it can be minimised. Uncertainty can be minimised through careful choice and examination of the alternatives, by drawing contingency plans, by using intuition and by getting support from the stakeholders.

The choice of a final strategy from alternatives should be broad-based. This means more alternatives should be generated to face the existing situation and the best out of this should only become the strategy. Before selecting the final one, each of the alternatives should be evaluated thoroughly. This evaluation should include the resources needed to support the alternatives. Resources ensure that the firm can operate in the future. If the resources are sufficient the risks of the new strategy are reduced to an extent.

Contingency planning is a way of minimising the uncertainty. These plans are meant for achieving the firm's objectives, if the original plan (strategy) fails to achieve the objectives. These plans which are based on the uncertainty of the situations or the environment will give confidence to the strategic managers and prepare them for any type of situation. Generally, these type of plans are prepared when the alternatives still under examination and a final decision is yet to be taken. If the contingency plans work well, it can be assumed that the final alternative will work better.

Another way to minimise the uncertainty is intuition. After all, intuition is a product of experience. Even though, it may appear irrational but an experienced strategic manager's intuition will definitely help in selecting the strategies with minimum uncertainty. Yet another way to minimise the uncertainty is the support of the stakeholders. Any final alternative which was chosen as a final strategy should have the support from the all stakeholders, more particularly the internal ones. The final choice should be broadly discussed with the groups effected by it, with the people who implement it and with the people who can contribute to it. Only after completing this process, the new strategy will get all the support from all the groups and people. Now, the firm is ready with the new strategy and the next step is to implement it.

3.6 IMPLEMENTING THE CHOSEN STRATEGY

After choosing the strategy for future, a firm should implement it. The implementation should fit into the present and future organisational realities. It should not go against the culture and the people of the organisation. Without their cooperation and support no change can be brought in.

A business truly operating at its best simply excels at the details of implementing a well-conceived competitive strategy. More and more companies are recognising that the best and most elegant strategy, implemented badly or not implemented at all, does little or no good and may even create new problems sometimes. Also there is no point in deciding to implement a strategy which is unrealistic or unviable. It is clear that excellent execution of a fundamentally sound strategy requires the total concentration of a company's limited resources on the key strategic goals of the business. In fact, many companies have found

that the greatest challenge in strategic management is the continual effort to refocus and enhance the links between strategy formulation and its execution. As mentioned earlier in this unit, the implementation of a strategy depends on two things:

i) Strategy's suitability to the culture of the organisation, and

ii) Structure of the organisation.

Let us now discuss these in detail.

Culture: The realities of the organisational life must be the foundations for strategy implementation . This is why culture is important. Culture encompasses all the actual behaviour and beliefs of the organisation. A strategic manager has to study the role of culture in implementing chosen strategy. Culture is a manifestation of the deep rooted behaviour. It may become an almost instinctive behavioural characteristic of the organisation. It defines what is expected of the members of the organisation in every situation and is transmitted from manager to manager informally.

Understanding the organisational culture is important to develop the strategies which can fit into it and to manage the change. Strategies must be consistent with the organisation's culture. Culture is found in shared values and indeed is a manifestation of those values. Culture affects the people and people affect the culture. The culture supporting the underlying values largely controls behaviour in such organisations. Changing culture is not an easy thing. But sometimes cultural norms may obstruct the necessary strategic change. In such situations, the roles must be changed and powers have to be realigned to change the longstanding institutionalised habits. Ineffective cultural beliefs must be exposed in such a way that those who hold them have an opportunity to change without losing their dignity. A strategic manager has two choices with regard to culture — to select a strategy which will achieve the desired resource within the organisation's culture or work within the culture to earn and develop power which can be used to make certain aspects of the culture more hospitable to the selected strategy. In both the cases culture has to be recognised before assessing the sources of the strategy and its implementation.

Structure: Structure is the configuration of the resources used by management to coordinate the activities of the organisation so that the objectives can be achieved. The managed resources can be physical, financial or human. Strategy and structure are interdependent. Strategy influences structure, and the existing structure, likewise, influences the strategic decisions. Chandler (for details, please see the next unit) in his study advances the thesis that structure follows the strategy. In his later studies he also felt that structure influences strategy.

Structure has two faces — one that appears to outside the organisation and the other inside the organisation. The outside face of the structure takes care of factors like competition and customer services while the inside face takes care of coordination and control. Researchers like Lippitt and Schmidt, Salter, Scott, Clifford felt that there is a need for an appropriate match between the inside and outside faces of the organisational structure. If there is a mismatch, distinctional behaviour tends to develop. Good organisation structures place resources and pressure where they should be, while testing the people who must use them. The structure and strategy relationship will be discussed in detail in the next unit.

Activity 4

Ascertain the changes in the structure of the organisation with which you are familiar and bring out the strategies which were responsible for such changes

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3.7 REVIEW OF RESULTS FOR FEEDBACK

After implementating a strategy, the organisation should test whether the new strategy is working or not towards fulfilling the desired objectives. The basic premise of strategic management is that the chosen strategy should achieve the organisation's objectives. But it is not necessary that the chosen strategy must work. This might be because of the choice of wrong alternatives, or because of the unexpected change in the environment or because of any other reasons. Hence, it is very essential to review the results of the new strategy and to get the feedback for improvements. This reviewing has three basic elements in it—developing the standards for evaluation, evaluating the performance and getting the feedback from the evaluation.

The standards or targets are the yardsticks against which the performance of a firm are measured. These are the ways in which the strategic managers have decided to evaluate the performance of the new strategy. These standards can be qualitative or quantitative. If the resources and environment do not develop as forecast then it is qualitative failure of the strategic management process. Alternatively, if a firm fails to achieve the quantified standards like a particular percentage of cost reduction in a low cost strategy firm, or a specific percentage of growth in a growth strategy firm, then it is a quantitative failure of the firm. Alongwith the standards, a firm also has to specify the methods of evaluating the performance of new strategy.

Evaluating performance is a very difficult task because many organisations are engaged in many complex activities. One of the most popular ways of measuring the performance is by comparing the performance with the standards. If the performance is higher than the standards, the management may decide to set the future standards at a higher point. On the other hand, if the performance is lower than the standards then there is a need for reviewing the strategic management process and to take the needful action. This is useful for the purpose of getting feedback.

Many organisations develop the standards for evaluation and evaluate the performance with the standards. They do not take the corrective actions to make the strategy a complete success. In fact, if the feedback is not provided to appropriate strategic managers for necessary action, the whole strategic management process becomes a waste. Causes of deviation may vary from unrealistic objectives to wrong strategy. Budgets, audits, management by objectives, strategy audits, management information systems are some of the tools and processes which are used in reviewing the performance and giving feedback. Strategy audit is a process of subjecting the new strategy to a number of tests of validity, consistency, and possible effectiveness.

Once the feedback is available with the firm, the management can assess whether the strategy is working properly or not. If it is not working properly then the question is whether small alterations are enough or the whole strategic management process should be started all over again. If the strategy is completely useless it may have to repeat the entire strategic management process.

Activity 5

Meet one of the persons of top management team of your organisation and find out if there was any strategy which was found to be not working after review. Also explain how it was corrected.

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3.8 SUMMARY

Good strategic management should meet the objectives of the organisation and of the stakeholders. The process of strategic management should assess the resources available and likely future environment. The present strategies should be evaluated against these and if any of them is found to be not working, the management should then generate various alternatives to select the final revised/new strategy. After selecting the new strategy it should be implemented. For this, an organisation should have suitable culture and appropriate structure. After implementing the strategy it should be reviewed for feedback. If the feedback is not favourable the suitabale amendments should be made. Sometimes it may be required to repeat the entire process again.

3.9 KEY WORDS

Objectives: are what the firm is hoping to do.

Integration: is a growth strategy in which an enterprise extends its operations upstream or downstream.

Diversification: is a growth strategy which involves adding of new products or services to the existing ones.

Harvest: is the slower process of liquidating in which the business continues to function but in a contracting way.

Divest: is a single step liquidation

Structure: is the configuration of a resources used by management to coordinate the activities of the organisation so that the objectives can be achieved.

Culture: encompasses all the actual behaviour and beliefs of the organisation.

3.10 SELF-ASSESSMENT QUESTIONS

1) Describe the various steps involved in the strategic management process with suitable examples.

2) What are the factors involved in the evaluation of a strategy and also explain how they influence the strategy?

3) Explain, with suitable examples, the various generic strategic alternatives involved in the process of generating strategic alternatives.

4) Explain how the culture and structure influence the implementation of new strategy.

3.11 FURTHER READINGS

Byars, Lloyd L, 1987, *Strategic Management—Planning and Implementation: Concepts and Cases*, Harper & Row Publishers, Inc.: New York.

Hatten, Kenneth and Hatten, Mary, L, 1988, *Effective Strategic Management: Analysis and Action*, Prentice-Hall: Englewood Cliffs.

Hill, Charles W.L. and Gareth R. Jones, 1989, *Strategic Management—An Integrated Approach*, Houghton Mifflin Company: Boston.

UNIT 4 STRATEGY AND STRUCTURE

Objectives

After reading this unit you should be able to understand :

- why matching of structure to the needs of strategy is important
- how strategy, among other factors, influences the structure of the organisation
- the strategy related benefits and shortcomings of various forms of structural design
- how transnational organisations are structured
- what structures are appropriate for different types of development programmes
- some newer perspectives on strategy and structure.

Structure

4.1 INTRODUCTION

Among several other things, successful execution of strategy depends on the appropriateness of the internal organisation which to a large extent is reflected in the structure. Structure represents the network of relationships within an organisation over a fairly long period of time. The question of structure is important because there are alternative forms of structural design which an organisation can use. A certain organisational form may be more suitable for dealing with certain situation than others. For instance, a functional centralised form may be more suitable for a speciality manufacturing firm but unsuitable for a firm operating in a highly complex environment. Once a structure is established (or gets established), it is not easy to change it, for it reflects the philosophy, prejudices and ambitions of management or owners and changing it may be perceived by them as threatening.

4.2 MATCHING ORGANISATION STRUCTURE TO STRATEGY

An important question before the top management in a firm is : how to match the structure to the needs of the strategy? A company, depending upon its size and objectives, may be pursuing several strategies simultaneously. There are no hard and fast rules to determine what kind of structure would be useful for which type of strategy. Each firm has its own history behind it and its managers have their own value systems and philosophies. The structure therefore is the consequences of these and several other variables. Moreover, each strategy rests on a set of key success factors or critical tasks. It is therefore desirable to design the organisational structure around the key success factors or critical tasks which are implied in the firm's strategy. This requires not only complete clarity on the key success factors (or critical tasks) but also requires making the units connected with the critical tasks or functions the main organisational building blocks. Further, the top management has to determine the degree of authority that has to be delegated to each unit, bearing in mind the benefits and costs of centralisation vs. decentralisation. It has to decide how the coordination among different units of the organisation would be brought about. We shall now dwell upon these three aspects briefly.

Strategy—Critical Activities

From the point of view of strategies, there are some activities which are critical to the success of those strategies while a large number of activities are of routine nature. The routine activities may be either maintenance or support type of activities e.g., handling pay rolls, accounting, complying with regulations, managing cash flows, controlling inventories and safe keeping of stores, training of manpower, public relations, market research etc. However, there are some critical tasks and functions which must be done exceedingly well for the strategy to be successful. For example, tight cost control is essential for a firm pursuing the strategy of low-cost leadership. This is particularly true if the margins are low and price cutting is widely used as a competitive weapon. For a firm which has chalked out 'differentiation' as its strategy, distinctiveness or sophistication in the design of its products is necessary. This needs emphasis on quality and excellence in workmanship. Thus, the activities that are critical to the strategy and competitive requirements may differ from firm to firm. Two alternative questions should help to identify strategy—critical activities:
(i) what functions have to be performed exceedingly well for the strategy to succeed? or
(ii) what are the areas where less than satisfactory prformance would seriously endanger the success of strategy?

After the critical tasks or functions for a particular strategy have been identified, the next step is to group the various critical activities, along with routine and support activities associated with the critical activities, into organisational units or blocks. This would require a close look into the relationships that prevail within the organisation. The flow of material through the production process, types of customers served, distribution channels used, sequence of operations to be performed, geographic location are some of the bases for scrutinising the relationships.

Degree of Authority (or decentralisation)

After the grouping of activities has been done and units have been constituted, the next question to tackle with is the degree of decision-making authority that has to be delegated in the managers of various units. Where the firm is engaged in several businesses, two alternative approaches can be followed. One is to centralise the strategic decision-making authority at the corporate level and delegate only operating decisions to the unit managers. The other is to substantially decentralise the strategic decisions to the unit managers, with the corporate staff providing necessary support to them. The corporate office in the latter case may limit its role to certain kinds of strategic decisions only. What should be the degree of authority given to the unit managers or how much autonomy should be given to them is essentially a question of managerial judgement and would depend upon a number of factors. The merits and demerits of decentralisation in each situation must be properly weighed, after taking into consideration the principal decisions the business unit managers make and how the corporate management perceives the importance of the various units in the overall strategy of the organisation.

In what way the authority is to be distributed across various units, some general observations can be made. Firstly, those activities and organisational units which play a key role in strategy execution should not be made subordinate to routine and non-key activities. Secondly, revenue or result producing activities should not be made subordinate to support activities or staff functions. Thirdly, authority for decision-making should be delegated to managers who are closest to the scene of action. Fourthly, the corporate office should hold authority over operating decisions to the minimum.

Providing for Coordination

Coordination among several units of the organisation can be accomplished in several ways. The principal way is to position the various activities in the verticle hierarchy of authority. Managers higher up in the hierarchy generally have broader authority over several organisational units and this enables them to have more clout to coordinate, integrate or arrange for the coordination of the units under their supervision. Insofar as business units are concerned, general managers are the central points in coordination because of their position of authority over the whole unit. Apart from positioning organisational units along verticle scale of managerial authority, a general manager can also achieve coordination of strategic efforts through informal meetings, special task forces, standing committees, and six monthly or quarterly strategic planning, budgeting and review meetings. Further, while formulating the strategic plan itself, a general manager can solicit the cooperation/association of other

general managers in the planning process and this would provide for inbuilt coordinational bridges right from the very beginning.

Activity 1

Try to acquaint yourself with the main strategy(ies) of your organisation. Keeping those strategies in mind, identify and list the key success factors (or critical tasks for success).

i) .....

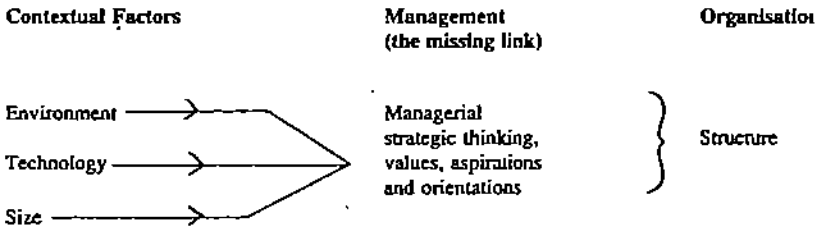
ii) .....

iii) .....

4.3 DETERMINANTS OF ORGANISATION STRUCTURE

What determines the organisational structure is a controversial question. Several hypotheses have been advanced. Some of the well known propositions relate to: size, technology, environment, and complexity. The research evidence is not conclusive on any of these propositions or determinants of structure which together constitute what has come to be known as the 'imperative school of thought'. It was left to John Child (Organisational Structure, Environment and Performance: The Role of Strategic Choice, Sociology, 1972: Vol. VI.) who provided the missing link between the contextual factors (viz., size, technology, environment) and the structure. The missing link was the manager, his values, aspirations and orientations as shown in Figure 4.1.

Figure 4.1 : Determinants of Organisation Structure



4.4 STRATEGY AND STRUCTURE PROPOSITION

Whether strategy precedes structure or structure precedes strategy is again debatable. There are arguments for and against the two positions. Research findings are conflicting. As a matter of fact, strategy and structure are mutually interdependent.

In several cases at least it may be found that strategy and structure are interactive. Suppose a company decides to pursue "differentiation" (based on quality improvement/new product development) through intensive R & D efforts as its competitive strategy, this may involve the creation of a new or substantial revamping of existing R & D department. This would mean enlargement of the present organisational structure. If the quality control manager is made to report to the production manager, a conflict of interests may ensue and the thrust of the new strategy may be lost. The quality control manager may therefore be made to report to the chief operating manager. This would also imply change in the organisation structure. This was a simple example where structure follows strategy. However, the opposite is also possible. And this would be the case when strategy has to take into account the prevailing structure. Let us take the example of a shoe chain store which believes in aggressive price competition as its strategy for market penetration. If the company has a centralised organisation structure where the prices are to be determined by corporate headquraters, the managers of the local chain stores have only to implement the new price list received from the headquarters (i.e., change the price tags). On the other hand if the structure is decentralised with authority for fixing or altering price vested in the stores' managers, the strategy for price competition would be quite different.

Strategy however should not become a slave of the structure i.e., it should not be constrainted by the structure. The implementation of a new strategy must envisage the necessary changes or modifications in the structure or organisational relationships.

Since the landmark research study by Alfred D. Chandler (Strategy and Structure, MIT Press, Cambridge Mass, 1962) several authors have veered round the view that organisation structure follows the strategy of the enterprise. It has been suggested that the organisation structure should be so designed that it matches to the particular needs of the strategy. Chandler found that changes in an organisation's strategy bring about new administrative problems which in turn require a new or refashioned structure if the new strategy is to be successfully implemented. His survey of seventy large industrial firms, supported by indepth study of four large corporations (General Motors, Dupont, Standard oil, Sears Roebuck) revealed that structure tends to follow the growth strategy of the firm but often not until inefficiency and internal operating problems provoke a structural adjustment. According to him the experience of these firms followed a consistent sequential pattern: a company adopts a new strategy → new administrative problems arise, profitability and performance decline → a shift to more appropriate organisational structure takes place which leads to improved strategy execution and more profitable levels. Chandler found this sequence to be oft-repeated as firms grew and modified their corporate strategies. Citing the experience of Dupont—as a typical example he states :

> The strategy of diversification quickly demanded a refashioning of the company's administrative structure if its resources, old and new, were to be used efficiently and therefore profitably; for diversification greatly intensified the administrative load carried by the functional departments and the central office. Once the functional needs and the activities of several rather than one product line had to be coordinated, once the work of several very different lines of businesses had to be appraised, once the policies and procedures had to be formulated for divisions handling a wide variety of products, and, finally, once the central office had to make critical decisions about what new lines of business to develop, then the old structure quickly showed signs of strain. To meet the new needs, the new organisational design provided several central offices, each responsible for one line of products. At the new general office, the executive committee and staff specialists concentrated on the overall administration.
>
> Source : Chandler, p. 113.

A logical conclusion of Chandler's study is that not all forms of organisation structure are equally supportive of implementing a given strategy. The thesis that **structure follows strategy** has a strong appeal. How the work in an organisation is structured is just a means to an end and not an end itself. Structure is a managerial device for facilitating the implementation and execution of the organisation's strategy and, ultimately, for achieving the intended performance and results. The structural design of an organisation helps people pull together in their performance of diverse tasks. It is a means of tying the organisational building blocks together in ways that promote strategy accomplishment and improved performance. The top management, and for that purpose also the general managers, have to **provide for the necessary linkages between strategy and structure for improved performance.**

Activity 2

Discuss with an experienced and knowledgeable person of your organisation regarding how strategy and structure affect each other.

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4.5 THE STAGES MODEL OF STRUCTURE

The experience of many firms indicates that organisation structure evolves through different stages. What structure an enterprise will have would depend upon its growth stage, apart from size and the key success factors inherent in its business. For example, the type of organisation structure that suits a small speciality steel tubes manufacturing firm relying

upon 'focus' strategy in a regional market may not be suitable for a large, vertically integrated steel producing firm with businesses in diverse geographical areas. To extend our example further, the structural form suitable for a multiproduct, multitechnology, multibusiness enterprise pursuing unrelated diversification is likely to be still different. Recognition of this characteristic pattern has prompted several attempts to formulate a model linking changes in organisational structure to stages in an organisation's strategic development*.

The basic idea behind the stages concept is that enterprises can be arranged along a continuum running from simple to very complex organisational forms; and that there is a tendency for an organisation to move along this continuum towards more complex forms as it grows in size, market coverage, product line scope and as the strategic aspects of its customer—technology—business portfolio become more intricate. The stages model proposes four distinct stage of strategy-related organisation structure.

Stage I : Organisations in this stage are essentially small, single business and managed by one person. The owner entrepreneur has close daily contact with employees. He personally knows all phases of operations. Most employees report directly to him and he makes all pertinent strategic and operating decisions. As a consequence, the organisation's strengths, vulnerabilities and resources are closely linked with the entrepreneur's personality, managerial ability, style and financial position. In a way, a Stage-I enterprise is an extension of the interests, abilities and limitations of the personality of its owner. The activities of such a business typically are concentrated in just one line of business.

Stage II : Compared to a Stage-I enterprise, a Stage-II enterprise has an increased scale and scope of operations which necessitate management specialisation and transition from one person management to group management. A Stage-II enterprise is fundamentally a single business enterprise which divides its strategic responsibility along classical functional lines: personnel, finance, engineering. public relations, manufacturing marketing and so on. In an enterprise which is vertically integrated such as an oil company, the main organisational units are sequentially organised from one stage to another e.g., exploration, drilling, pipe lines, refining, wholesale distribution, retail sales, etc.

Stage III : A Stage-III enterprise, though in a single field or product line has operations which extend to several geographic areas. Within a broad policy framework, these units have considerable flexibility in formulating their own strategic plans to meet the specific needs of their geographic areas. Based on the principle of geographic decentralisation, each unit, operating as a semi-autonomous entity, is structured along functional lines. The main difference between a Stage-II and a Stage-III enterprise is that while the functional units of a Stage-II enterprise stand or fall together (since they are built around one business at single location), the operating units of a Stage-III enterprise can stand alone in the sense that the operations in different geographic units are not inextricably linked or dependent upon the units of other areas. The firms that represent this category may include firms in the cement, brewery, heavy machinery, fertiliser industries. The chain stores of a footwear company like Bata may also fall in this category. IFFCO, SAIL, NTC, HMT, are some examples of Stage-III enterprises.

Stage IV : Stage-IV represents the ultimate in the evolutionary growth of an enterprise. The firms in this category are typically large multiproduct, multiunit, multitechnology enterprises whose units operate on decentralised lines. Enterprises in this category reach this stage because their corporate managements generally lay considerable stress on the strategy of diversification—related or unrelated. As with the Stage-III firms, the semi-autonomous units of Stage-IV firms may have substantial flexibility in formulating their strategies and policies relating to their own lines of business. All the units however report to corporate headquarters in accordance with the performance parameters decided upon. They conform to the broad guidelines laid down by the corporate office. The general manager of each unit has overall responsibility for the total business as his authority extends to all the functional areas. However, some functions and staff services may be centralised at the corporate level. The prominent example of firms in this category are: ITC, Shaw Wallace, Grasim Industries, ICI, JK Industries, etc.

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* Salter, Malcalm S., Stages of Corporate Development. Journal of Business Policy 1, No. 1, Spring 1970, pp. 23-27; Thain Donald H; Stages of Corporate Development. The Business Quarterly Winter 1969, pp. 32-45; Scott, Bruce C. The Industrial State: Old Myths and New Realities, "Horvard Business Review, March-April 1973, pp. 133-148; and Chandler, Alfred D. Strategy and Structure, MIT Press, Cambridge, Mass. 1962, Chapter 1.

Some Comments on the Stages Model : The stages model provides useful insights into why structural configuration tends to change in accordance with the change in size, geographic spread, technology and strategies. As firms progress from small, entrepreneurial enterprises following a basic 'concentration' strategy to more complex phases of volume expansion, verticle integration, geographic extension and line of business diversification, their organisation structures evolve from unifunctional to functionally centralised to multidivisional decentralised organisation forms. While at the one end of the spectrum come single line businesses which invariably have centralised functional structures, at the other end come highly diversified enterprises which again invariably have decentralised divisional form. In between come firms which have limited diversification. Such firms may have hybrid structures partaking the characteristics of functional and product divisional forms.

Some comments of clarificatory nature at this point are in order. It is not necessary that a firm must begin at Stage-I and reach ultimately to Stage-IV. Most of the large enterprises today right away begin with Stage-II or even Stage-III. A firm in the evolutionary process may skip one or more of the stages in the journey. For example, it is not necessary for a firm in Stage-II to pass through Stage-III to reach Stage-IV. Some firms may exhibit characteristics of two or more stages at the same time i.e., some operations of these firms may be decentralised geographically (for example, warehouses or transport facilities of a large steel mill like TISCO or a company like Coal India Limited) and some other operations (for example procurement of raw material, plant and machinery, manufacturing facilities) may be centralised.

No organisational form is sacrosanct. A kind of subtle experimentation always goes on. Some firms, after a stint with decentralisation may revert to the centralised form. For example, the five separate decentralised, fully integrated units of Dupont of USA—Rayon, Acetate, Nylon, Orlon, and Dacron—were consolidated into a Textile Fibre Unit with a single multifibre field force (earlier each unit had its own sales force which vied with each other for business from the same set of customers and thus competing with each other) organised around four market segments namely menwear, womenwear, home furnishing, and industrial products. Whenever management changes its strategy it must reivew its organisation structure. It must answer this question : is the organisational structure still alright or does it need modification? The answer to this question could lead the management in recognising whether there is or not a mismatch between the strategy and the organisation structure.

Activity 4

Try to familiarise yourself with the historical growth of your organisation. At what stage did the organisation start and at what stage is the organisation presently?

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4.6 FORMS OF ORGANISATION : STRATEGY RELATED BENEFITS AND LIMITATIONS

There are some well known forms or approaches to organisational structuring: Functional, Product Divisions, Holding Company, and Matrix. There are also other variants of these basic forms. Since you must be familiar with these organisation forms i.e., what these organisation forms are and what are their main characteristics, we shall confine our discussion here to strategy related benefits and limitations of these forms of organisation.

Functional Structure

A functional structure tends to be effective in a single business unit where key activities revolve around well defined skills and areas of specialisation. Concentration on performing functional area tasks increases specialisation leading to greater operating efficiency and

development of distinctive skills. The functional specialisation promotes fuller utilisation of capacity of resources, including technical skills—manpower, facilities and equipment. These are strategically important considerations for single business organisations, dominant product enterprises and vertically integrated firms.

What form the functional specialisation will take varies according to customer-product-technology considerations. For instance, a hospital is often compartmentalised according to the needs of its clients, i.e., outdoor and indoor divisions which are further departmentalised into paediatrics; arthopaedics; cardiology; ear, nose and throat, etc. A municipality is also departmentalised according to purposeful functional areas viz., fire, public safety, health services, maintenance of roads, water and sewerage, recreation, education, etc. A technical instrument manufacturing firm may be organised around research and development, engineering, production, technical services, quality control, marketing, personnel, finance and accounting.

The problem with the functional structure is that it may not be easy to keep strategic coordination across different functional units. The functional specialists tend to have their own perspectives on how the task can be accomplished and this creates difficulties in achieving coordination. Because they talk in different languages, they may not have adequate understanding of and fail to appreciate each other's strategic roles and changes in the circumstances. Besides, the functional specialists often develop their own mind-sets and are more loyal to their own functional goals rather than the goals of the organisation as a whole. This imposes considerable strain on the general manager in terms of resolving cross functional differences and clearing the clogged communication lines and enforcing cooperation. The functional form may also stand in the way of promoting entrepreneurial creativity, adapting quickly to major changes in the customers, market and technological scene and in pursuing opportunities that go beyond the conventional boundaries of the industry.

Product Divisions

For a diversified enterprise producing a variety of products belonging to different industry groups, using different technologies and with plants at different locations, functional structure makes the job of the manager incredibly complex. In such an enterprise the needs of the strategy virtually dictate that different businesses be organised into different business (or product) divisions which may then be organised along functional lines.

Putting all activities belonging to the same business under one roof facilitates implementation of strategies. With appropriate authority delegated to the general managers of the divisions, accountability for results can be stressed in such an arrangement. Reward system can be geared to motivate managers for improved performance by providing incentives. If entrepreneurially oriented and experienced persons are appointed as general managers of divisions, the performance of the entire organisation may improve on account of better responsiveness and quick decision-making.

However, where activities are not or cannot be properly divisionalised or where considerable interdependence exists between the components of the organisation, as it may happen in a firm with related diversification, this form may result in the lack of cooperation among autonomy conscious managers and thus hinder coordination.

Strategic Business Units : Often by introducing one more layer between the chief executive officer (CEO) and the general managers of divisions, **Strategic Business Units (SBUs)** may be created to give separate but related areas within the total enterprise some cohesive direction. The SBUs are an attempt to rationalise the firm's varied businesses, particularly where the span of management for the chief executive is too large i.e., general managers of several divisions, say 40-50, report to him. Under such conditions it is useful to group strategically related businesses (divisions) and place them under a Vice-President (a new layer create). This may improve strategic thinking, planning and coordination of diverse business interests. The strategic relatedness may include a closely related strategic mission, a common need to compete globally, and common key success factors. The SBU concept is quite popular in the United States. The General Electric, Union Carbide, General Foods are some well known examples of the firms which have capitalised on this concept in that country.

However, the location of tasks between SBUs head (i.e., vice-president) and general managers of various units comprising the SBU is a delicate matter which needs careful balancing between needs of the general managers for necesary latitude and a need of the heads of the strategic units for strategic coordination.

Holding Company

Holding company is one which has one or more subsidiary companies. According to Section 4 of the Companies Act, 1956 a company shall be deemed to be a subsidiary company if the other company is the controlling company i.e., it (i) holds more than half in nominal values of its equity share capital (or exercises or controls more than half of its total voting power); or (ii) controls the composition of its Board of Directors; or if the subsidiary company itself is a holding company of another subsidiary company, then the latter will also become the subsidiary of the holding company of which the former is a subsidiary company.

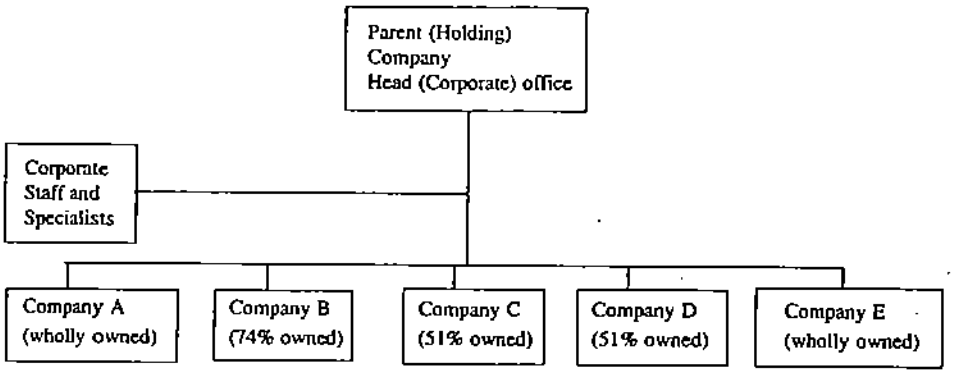
In India, holding company form has been adopted as one of the structural forms for organising public sector enterprises. The well known examples are Fertiliser Corporation of India (five subsidiaries), State Bank of India (eight subsidiaries), General Insurance Corporation (four subsidiaries). Some other public sector enterprises which have subsidiaries are: Steel Authority of India Limited, Coal India Limited, and National Textile Corporation.

What degree of strategic control the holding company will have in the subsidiary companies or how involved it would be in the affairs of the subsidiary companies, it all depends. The extent of control, or involvement may vary from very little to quite substantial. Often, however, the holding company form is adopted because the management of the parent company wants to give maximum freedom to the managements of the subsidiary companies.

The holding company may have shareholdings in a variety of connected or unconnected business operations. In such a situation, the holding company is virtually a conglomerate, and in another sense it may really be an **investment company**. In reality, therefore, it operates a portfolio of autonomous business units or investments. The subsidiary companies have their separate, legal entities and have their own names, thus retaining their own identities. The holding company may limit its role to decisions involving buying and selling of such companies. A simple organisation chart of a holding company is given in Figure 4.2. The business interests of the parent company may range from 100 per cent (wholly owned subsidiary) to 51 per cent.

The parent-subsidiary relationship may emerge as a result of original planning of the promotor or it may come about due to subsequent developments e.g., growth of the enterprise (new activities/business organised as separate legal entities rather than as organic divisions). This kind of relationship may also emerge on account of acquisitions or takeovers. While holding companies in the Indian public sector typically consist of subsidiaries representing various geographic units, the subsidiaries in the case of holding companies in the private sector typically consist of companies with diverse interests, such as construction, shipping, hotels, mining and engineering, etc. ITC is one such example of the holding company in the private sector.

Figure 4.2: Holding Company : A Simple Organisation Chart



If a holding company consists of clusters of subsidiaries, representing diverse interests, these clusters may be organised into different divisions at the corporate headquarters. For instance, the various hotels of a company may all be affiliated to the hotel division at the

headquarters. This enables the corporate management to formulate a company-wide business strategy, for example, for all the hotels and coordinate their activities, if necessary. The essential point in a holding company is the extent of autonomy the various subsidiaries have in relation to strategic decisions and this may be influenced by whether or not there are divisions in the parent company.

The holding company form offers several advantages. It enables the spread of risk across many business ventures and facilitates the divestment of individual companies if circumstances so demand. The subsidiaries can benefit from their belonging to the membership of the group. The losses of one may be offset against the profits of another. Protection is thus afforded to loss-making units in bad times. The subsidiaries can have the benefit of cheaper finance for investment from the parent company for expansion or technology upgradation. They are not burdened with high central overheads since the head office usually has a lean staff.

The holding company form may not be without some pitfalls, especially when subsidiaries are created as a result of takeover craze. The empire building may lead to lack of internal strategic cohesion. Since the aim in the holding company design is to keep the centre as slim as possible, the necessary skills at the centre to provide help to subsidiaries may not be available. This form may also lead to some duplication of efforts in the enterprise if taken as a whole. There may be very little synergy between different business interests.

Matrix Form

As you must be aware the key feature of the matrix form is that product (or business) divisional form is overlaid on the functional structure to form a matrix or grid, resulting in dual authority for most of the members of the organisation. The combining of the two structural forms usually results in a compromise between the functional specialisation and line-of-business specialisation. The members in such an organisation have to learn to live a "new way of life". They have to adjust to a different kind of organisational climate.

For organisations which work in a dynamic or fast changing environment or where product life cycle is relatively short or where the organisation has to be constantly on the lookout for new products, matrix form is the answer. The business managers and resource managers in a matrix structure have important strategic responsibilities. The team approach implicit in a matrix promotes internal checks and balances the differing viewpoints and perspectives. Several well known companies in the United States, such as General Electric, Texas Instruments, Boeing, Dow Corning, Citibank use matrix structures.

Since matrix form is likely to generate some amount of conflict, friction and misunderstanding, it must be carefully designed. It is a complex structure to manage. Apart from the expectation that everybody must communicate with every body else in the grid, decisions may be delayed.

A Brief Discussion on Forms

From the above discussion on various forms it may be observed that there is no such thing as an ideal organisation design. There are no universally applicable rules for matching strategy and structure. It is quite possible that two firms with similar strategies may work with two different structures. Of course, a structure that suit one strategy may be totally unfit for another. Further, a structure which has worked well in the past may not work well in the future. Changes in customer-product-technology relationships may make the structure of a firm strategically obsolete. An organisation structure is thus dynamic. Changes are not only inevitable but typical.

Experience shows that pragmatic considerations, such as the constraints imposed by the personalities involved and the corporate culture influence the design of the structure. The design of the structure however should begin with a strategy-structure framework. The latter should get precedence over the organisation's internal situation, including the personalities involved. Once the structure has been built keeping in mind this framework; it may be modified to adapt it to the peculiar situation of the organisation.

As already stated, there is nothing like the "best" form in organisation design. Each form that we have discussed in this section has its own strategy related strengths and weaknesses. The adoption of one form does not preclude the use of one or more of the other forms. Many

organisations are large and diverse enough to accommodate more than one form for their different lines of activities. The best organisational form is the one that best fits the overall situation.

Some generalisations may however be made. Firstly, where the firm is engaged in a single product line or it uses continuous process or assembly type of technology, the structure tends to be functionally oriented because standards of performance and tightly sequenced integration are crucial. Secondly, where an organisation operates in a tightly regulated environment (e.g., government agencies), it often has a more rigid, authoritarian and bureaucratic organisation structure because government rules and regulations have to be observed. Such rules and procedures leave little latitude for individual discretion. Thirdly, where a firm's products are mostly custom made and there is a wide variety in the day-to-day work routine or where the process of production is high technology based, the structure tends to be decentralised and the organisational members have greater freedom of decision and action. Fourthly, the greater the diversity within an organisation's business the greater is the likelihood that the most effective organisation form will be decentralised and multidivisional. Finally, the more uncertain and diverse the organisation's product-market environment, the more likely it is that the firm will utilise a loose "organic" design (e.g., matrix) with considerable managerial latitude given to subordinates. It is not difficult to understand the logic that lies behind this. The structural flexibility is more conducive for the organisational units to adapt to their peculiar environments.

Activity 4
What kind of structural form your organisation has? Is it suitable keeping in view the needs of the strategy? Critically evaluate.

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4.7 STRUCTURING MULTINATIONAL (TRANSNATIONAL) ORGANISATIONS

It is a common knowledge that companies typically begin their international operations through exporting. One way to fit the personnel and resources concerned with exports is to attach the new export unit to one of the existing major parts of the organisation serving domestic markets. In companies organised along functional lines, exporting activities or international sales are frequently attached to the sales division.

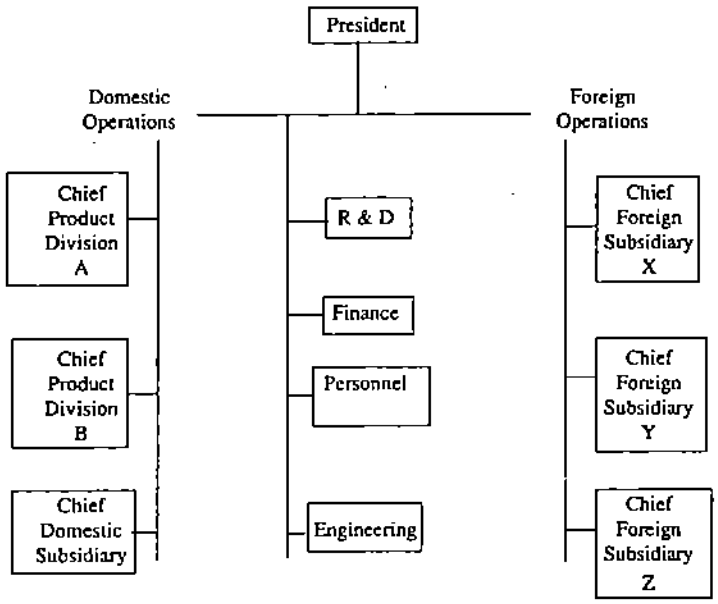
In firms having a divisionalised product structure, (i.e., whose major divisions correspond to different products or product groups), the export department is often appended to the product division whose export it handles. Thus, one or all of the major product divisions may have their own export departments. As export activity expands, company organised in this fashion will think in terms of amalgamating the various export departments into a single unit serving entire company. Whether the structure of the company undergoes change are not, a lot would depend whether exports are handled directly by the producer company or by a trading company as it happened in the initial stages in Japan. However, if the producer in course of time finds that a ready market for its products exists abroad, it may accelerate the attainment of still larger sales. It may therefore decide to do away with the trading company and handle exports directly. The producer then makes arrangements for finance, marketing intelligence and distribution. There is a tendency for such successful exporters to establish their own sales subsidiaries abroad. The Hitachi company in Japan relied heavily on the trading companies to carry its products abroad during early stages of its international development. As its volume of business abroad expanded, it gradually relied less on trading companies and more on its own management of foreign operations, including joint ventures and wholly owned subsidiaries.

Once a firm has established its own operating units abroad, the original issues change from those in the exporting stage to the relationship between overall corporate structure and quasi-independent foreign based subsidiaries which have their own management and productive resources.

Mother-Daughter Type Structure

The relationship between the corporate office and the subsidiaries may be informal as it happened in the early stage of development with most of the multinational companies of Europe. The chief executive deals with them on individual basis. The various operating units (subsidiaries) may be staffed largely by relatives of the founder. Thus the whole company is a family affair. The highly personalised relationship between the Chief Executive Officer (CEO) of the parent company and the managing directors of the foreign subsidiaries has come to be known as mother-daughter type of organisation. This is shown in Figure 4.3. This type of organisation allows considerable discretion to the chiefs of the national operating units. Control from the centre is mainly exercised through personal visits by the chief executive officer to the various units. The focus of control is often on financial performance.

Figure 4.3 : Mother-Daughter Structure

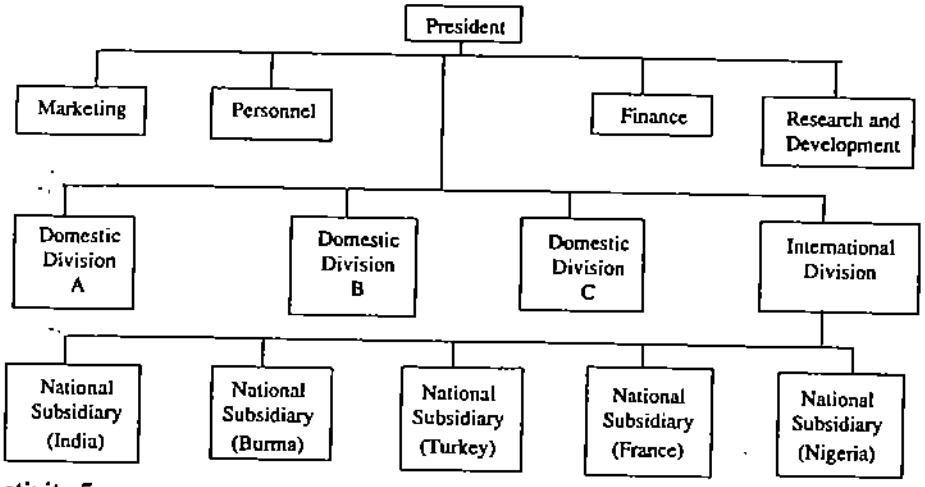


The limits of the mother-daughter structure usually surface when multinational companies begin to expand geographically. The CEO's personal knowledge of diverse countries of say Asia, Africa and the Middle-East can only be superficial. That is why, perhaps European multinations such as Philips, Ciba Geigy, and Nestle led the move away from the mother daughter organisation towards more global structures.

International Division

Since most of the multinationals in United States were already organised on product divisional lines, they added an international division to the existing structure when they were faced with the expansion of operations abroad. The international division has its own staff and an executive incharge. The various foreign subsidiaries become its operating units as shown in Figure 4.4. This form of structure provides a central focus within the firm with the strategy directed at the firm's international opportunities. The international operations have no longer to play a second fiddle to the domestic operations. Unlike mother-daughter structure, international division lends itself more readily to the establishment of formal reporting procedures and a less personal form of control. Grouping together of the firm's international operations not only gives them more weightage within the organisational hierarchy but it also facilitates the training and development of a core of international managers. Moreover, the considerable autonomy that the heads of the various national subsidiaries typically enjoy within their national spheres clearly fixes responsibility and accountability for results while leaving them free to respond to local conditions.

Figure 4.4 : International Division



Activity 5

What could be some other advantages and disadvantages of the international division form of structure? List them below (one advantage and one disadvantage is listed for you).

Advantages

i) Flexibility : The structure can be readily supplemented with special project teams and international committees for a greater degree of international coordination.

ii) .....

iii) .....

Disadvantages

i) Friction : This form gives rise to friction arising from cultural split between international managers working abroad and domestic managers oriented towards national context of the firm's home country.

ii) .....

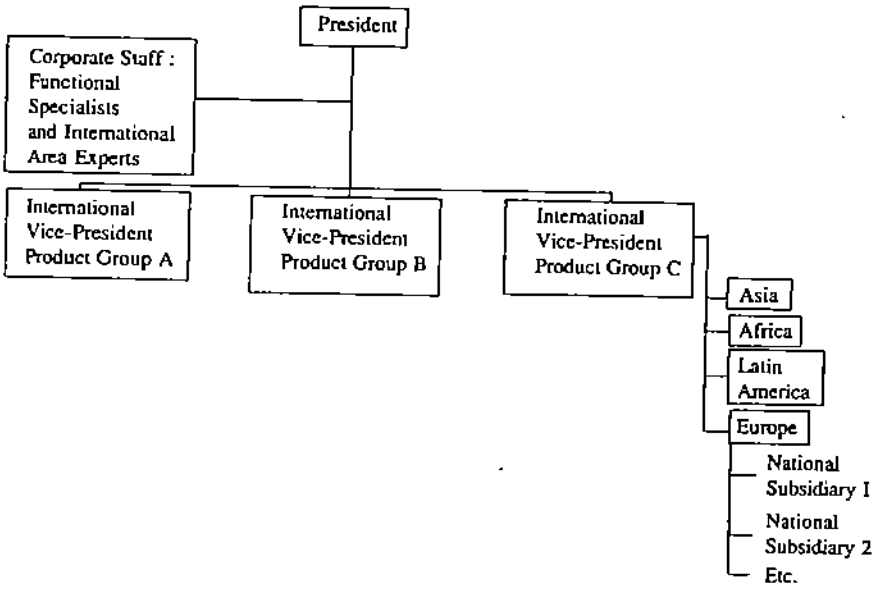
iii) .....

Global Structures

Global structures may be either global product structures or global area structures. Let us first talk about global product structure.

Global Product Structure : Unlike the international division form where the overall control, coordination and direction is concentrated with one executive and with one division, global product structures assign primary responsibility to international product managers with a world-wide mandate for specified product groups as shown in Figure 4.5.

Figure 4.5 : Global Product Structure



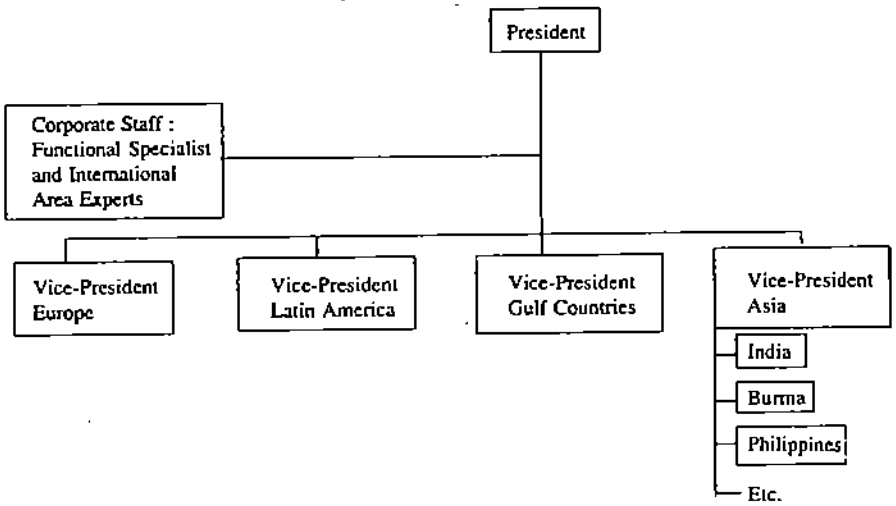
Each manager incharge of an international product group is assisted by a staff equipped to scan the international environment on a global scale. He has both the necessary information and authority to mobilise firm's international resources behind global strategies.

Compared to the international division, the global product structure shifts some of the important authority away from managers managing national subsidiaries and places it in the hands of executives with world-wide product responsibility. The aim is to achieve better international coordination within specific product groups. A more global view of competition and the firm's strategic opportunities is possible. It facilitates cross-broader coordination of product activities which may include manufacturing, marketing and technology transfer. Technology transfer is of particular importance for firms which have sizeable investment in R & D. They must defuse the new technology globally within a relatively short period. With its emphasis on cross-broader rationalisation of marketing and productive activities the global product structure has the potential for improving cost efficiency.

While global product structure offers several benefits, certain amount of duplication of activities may become inevitable. However, the fact that several of the more experienced MNCs have continued to use the structure indicates that the problems are few and manageable, especially if a corps of senior managers with international outlook and experience are developed.

Global Area Structure : Under global area structure, the firm's operations are segmented geographically into several regions of the world. Each region has responsibility for an area (or region) and has area (or regional) headquarters. Below the area headquarters, the activities may be organised either on product basis or on function basis or on national basis. The structures will then be known as **global area product structures, global area functional structures,** and **global area national structures** respectively. An organisational chart of global area national structure is presented in Figure 4.6.

Figure 4.6: Global Area Structure



Activity 6

In the preceding section we discussed two types of global structures: Product and Area. List some common features of these structures (one feature is listed for you).

i) Multiple international headquarters and staff

ii) .....

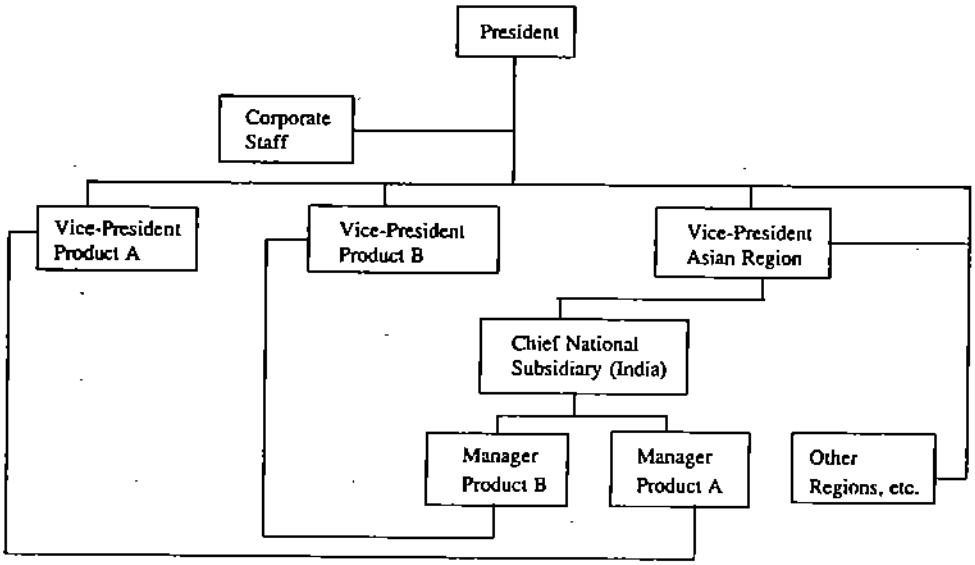
iii) .....

Taken from the viewpoint of highest level of corporate hierarchy, the move towards a global structure represents a more decentralised approach to international operations, as compared to either the international division or the mother-daughter organisation. The responsibility for cross-broader coordination among multiple international headquarters is spread under global structures instead of it being concentrated in a single headquarters exercising control over all international operations.

Matrix Structures

Under matrix structures authority and responsibility are assigned along at least two dimensions which, in the international context, are often product and region. As illustrated in Figure 4.7 the firm's various product groups are coordinated globally, each by its own vice-president. Its operations are also coordinated by area, with authority for this type of control vested in regional vice-presidents. The aim is to get best product and area centered coordination. Problems may sometime arise because of dual authority inherent in such structures. As shown in Figure 4.7 the chief of the national subsidiary is directly responsible to the Vice-President of the Asian region. The product groups within his subsidiary and under his direction also report to their respective product group Vice-President. The national managers of product groups A and B are responsible to both the President of the national subsidiaries and the Vice-President of their respective product groups. Despite its some apparents shortcomings the matrix structure has been adopted by several leading multinationals. We also come across cases where matrix structure, due to its own inconsistencies, was abandoned in favour of global product structures.

Figure 4.7: Matrix Structure



4.8 STRUCTURE FOR DEVELOPMENT PROGRAMMES

Though governments world-wide are characterised by hierarchical structures which depend largely on the use of rules and authority, they however do recognise the importance of creating new organisational structures and reforming the existing ones. That they are generally slow in adopting change is another thing. The corporate form of organisation for public sector manufacturing or commercial undertakings in India, for example, reflects the belief that this form of organisation is more appropriate than the departmental form. Commissions and task forces are often set up by governments to recommend structural reorganisation to fit the changed task requirements. Ministries and departments are regrouped and sometimes some departments are abolished, especially when a new government takes over. When strategies change, structures need to be realigned.

Structural Form

Governments usually have functional structures. The tasks or services are broken up according to the functions. Since development programmes are normally initiated by Ministries, there is a tendency for the sponsor to prescribe a structural form (often the functional form) for the programme. However, an across-the-board approach may not be desirable for programmes of complex nature. The appropriateness of a structure can be judged only in relation to a programme's strategy and environment. The designer should start with the tasks and goals identified in the strategy and search for the best structural form.

When a programme deals with a single service or is relatively small or the technology it uses is simple, or production processes are standardised and processing of information is relatively easy, the **functional** (hierarchical) **structure** would suffice. To illustrate, for a

dairy development programme where four basic functions can be identified: providing service to farmers (extension, inputs), milk collection, quality control and transport, the functional form can be adopted. The integration of these and some other support or common functions (e.g., milk processing, marketing, finance, etc.) takes place at the level of the chief executive.

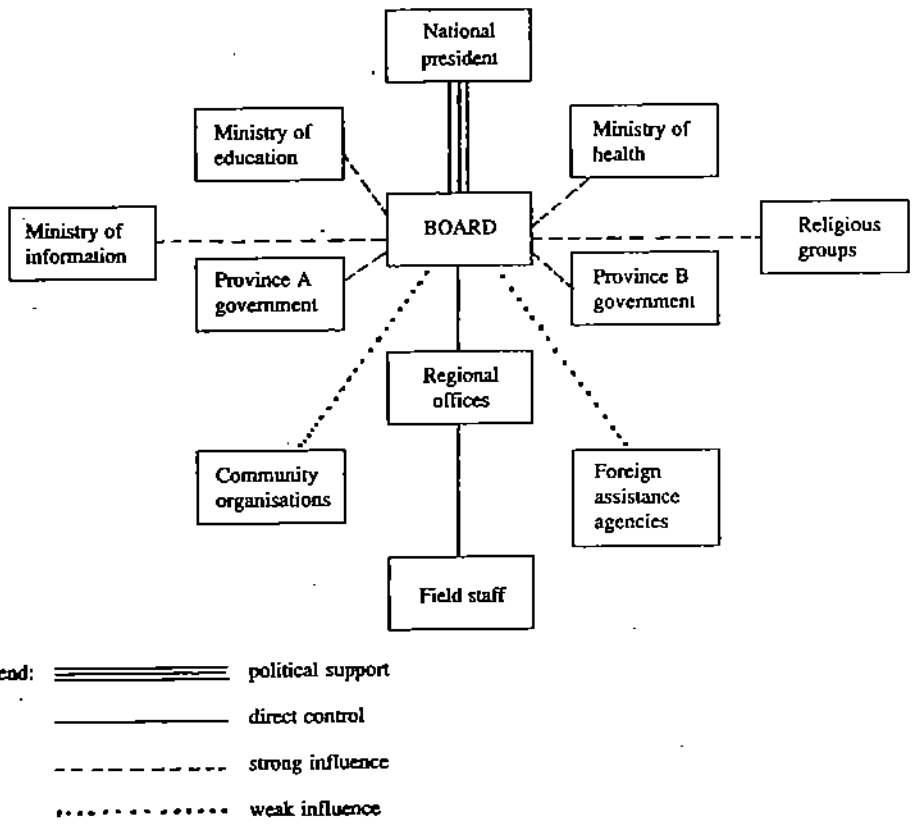
However, when a programme grows larger geographically, or adopts a multiple service strategy (e.g., an agricultural programme diversified into health and education), a simple functional structure may no longer work. Many development programmes, spread over a wide geographical area, require local adaptation of services. **Matrix structures** are increasingly used when programmes diversify their services or expand. In the agricultural programme that we cited earlier, personnel for health and educational services may be drawn from relevant Ministries of the Government on the understanding that the technical back up for the services will be provided by the Agricultural Ministry.

Though, dual authority exists at the middle level in the matrix organisation, it merges into a unified commend at the top. In a large and complex development programme, however, joint decisions and resolution of conflict often require the formal cooperation of several organisations outside the programme agency. Net work structures would be more appropriate.

Network Structure

Network structure is more appropriate for large and complex programmes as it facilitates inter-organisational cooperation. Under the network structure a lead agency creates a network of relevant public and private agencies which have an influence on the programme. The lead agency coordinates but does not control which is left to the local or constituting units. The lead agency influences the collaborating agencies by joint allocation of funds, joint planning of activities, political support and review at higher levels. Figure 4.8 illustrates the network structure of the Indonesian population programme. It will be seen that the lead agency was the Population Board which had strong political support of the country's President.

Figure 4.8 : Network Structure of the Indonesian Population Programme



Source: Paul, Samuel C, Strategic Management of Development Programmes, International Labour Office, Geneva, 1983, p. 83.

The problem with network structure is that the lead agency may have little control or influence over members of the network, except those who belonging to its own organisation i.e., its own regional offices and field staff over which it has direct control.

We have discussed some structural forms in the preceding paras. For other matters related with the organisational structures for development programmes, the degree of decentralisation and the amount of autonomy that should be given to the heads of the various programme agencies, some guidelines for structural choices are summarised in Appendix I to this unit.

Activity 7

What structure would you suggest for a development authority:

i) Which acquires all its single type of inputs (e.g., coffee seeds) from farmers in a certain region.

.....

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ii) Which depends on several agencies, public and private, provincial and local governments, for its diverse inputs and functions.

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4.9 PERSPECTIVES ON STRATEGY AND STRUCTURE

In this section we will acquaint you with some recent or widely acclaimed perspectives on strategy and structure. Two perspectives are provided here: one by Michael E. Porter (Competitive Strategy, The Free Press, New York, 1980) and the other by Thomas J. Peters and Robert H. Waterman Jr. (In Search of Excellence, Warner Books, 1982). We shall first take up Porter's view.

Porter's Perspective

Porter has enunciated three **generic strategies:** Overall Cost Leadership, Differentiation and Focus. According to him the successful implementation of the three generic strategies requires not only different resources and skills but also imply different organisational arrangements, control procedures and inventive systems. You will recall that these three generic strategies were discussed in MS-11 (Corporate Policies and Practices). Let us briefly recapitulate what these three generic strategies are:

Overall cost leadership (common in 1970s in the USA) is achieved through a set of functional policies culminating into what is popularly known as the Experience Curve Effect. This strategy requires construction of efficient scale facilities, vigorous pursuits of cost reduction from experience, tight cost and overhead control, and cost minimisation in areas like R&D, sales force, advertising and so on. A great deal of managerial attention to cost control is necessary to achieve the aims. The **differentiation strategy** implies offering a product or service by the firm which is perceived in the industry as being unique. Differentiation can be approached in many ways (one or more at the same time): product design features, brand image, technology, customer services, dealer network and other dimensions. The **focus strategy** means concentrating on a particular buyer group, segment of product lines, or geographic market. As with differentiation, focus may take many forms. Whereas the 'low cost' and 'differentiation' strategies aim at achieving their objectives industry-wise, the focus strategy is built around serving a particular target very well. All

functional policies are geared in that direction. This strategy rests on the premise that the firm is able to serve its narrow strategic target more effectively and efficiently than those competitors who are engaged in broader activities. For more elaboration of these generic strategies we suggest that you refer to the relevant units of MS-11.

We now turn our attention to the organisational requirements for each strategy. Some common implications of the generic strategies in terms of skills and resources and organisational requirements are presented in Figure 4.9 which are self-explanatory.

4.9 : Organisational Requirements for Different Generic Strategies

Generic Strategy	Commonly Required Skills and Resources	Common Organizational Requirements
Overall Cost Leadership	Substained capital investment and access to capital Process engineering skills Intense supervision of labour Products designed for ease in manufacture Low-cost distribution system	Tight cost control Frequent, detailed control reports Structured organization and responsibilities Incentives based on meeting strict quantitative targets
Differentiation	Strong marketing abilities Product engineering Creative flair Strong capability in basic research Corporate reputation for quality or technological leadership Long tradition in the industry or unique combination of skills drawn from other businesses Strong cooperation from channels	Strong coordination among functions in R & D, product development, and marketing Subjective measurement and incentives instead of quantitative measures Amenities to attract highly skilled labour, scientists, or creative people
Focus	Combination of the above policies directed at the particular strategic target	Combination of the above policies directed at the particular strategic target

Source: Porter, Michael E., p. 40-41.

Industry Maturity and Organisational Arrangements: According to Porter, not only different organisational arrangements, leadership and motivation systems are needed for different generic strategies, different organisational structures and systems are also needed as the industry **transitions to maturity**. Some suitable adjustments must takes place in the area of control and motivation system as well. As the industry matures, more attention to costs, customer service and true marketing (as opposed to selling) may be required. More attention to refining old products rather than introducing new ones may be necessary. The less "creativity" and more attention to detail and pragmatism is often what is needed in the mature business. These shifts in competitive focus obviously require changes in the organisational structure and systems to support them. Systems designed to highlight and control different areas of the business are necessary. The various elements of the structural and system requirements of mature business are tabulated in Figure 4.10.

Figure 4.10: Organisational System Requirements of Mature Business

- Tighter budget
- Stricter control
- Performance based incentive systems
- Control of financial assets such as inventory and accounts receivable
- More coordination across functions and among manufacturing facilities
- Major changes in plant manager's job.

In short it may be stated that there has to be more emphasis on formal arrangements than on the informal ones as hitherto. The competitive shifts (e.g., aggressive marketing, price

competition) and new organisational requirements may be resented to by people within the organisation who till the other day prided in pioneering high quality products. Sacrificing quality for costs and close monitoring of costs may be resisted. Furthermore, new reporting requirements, new controls, new organisational relationships and other changes may sometimes be seen as a loss in personal autonomy and as a threat. A company therefore must be prepared to re-educate and remotivate personnel at all levels as it enters the maturity stage.

Peters and Waterman's Perspective

Large companies tend to be complex. Unfortunately, many of such companies, according to Peters and Waterman respond to complexity by designing complex systems and structures rather than simple ones. A favourite candidate for the **wrong** kind of complex response is the matrix organisation structure. For a multiproduct, multilocation and multimarket company, with several functional departments, a four dimensional matrix may be a normal choice. However, such a matrix is a "logical mess". The matrix is quite confusing: "people aren't sure to whom they should report for what. The most critical problem, it seems, is that in the name of "balance", everything is somehow hooked to everything else. The organisation gets paralysed because the structure not only does not make priorities clear, it automatically **dilutes priorities**. In fact, it says to people down the line: "everything is important: pay equal attention to everything".

None of the excellently managed companies, according to the authors, had matrix structures, except for the project management companies like Boeing. Even early users of the matrix technique such as Boeing and NASA emphasised one key dimension of the organisation structure to which they accorded clear-cut primacy, and this could be either product, or geography or function. How have the excellent companies avoided matrix forms? They have done so by sticking to simple forms. "Most of the excellent companies have a fairly stable, unchanging form—perhaps the product divisions—that provides the essential touchstone which everybody understands, and from which the complexities of day-to-day life can be approached."

Excellent companies are quite flexible in responding to fast changing conditions in the environment. They make better use of small divisions or other small units. "They can reorganise more flexibly, frequently, and fluidily. And they can make better use of temporary forms such as task forces and product centres" and other ad hoc devices. Most of the reorganisation takes place around the edges. The fundamental form rarely changes that much. The most common simple form found by the author was the product division. Several companies avoided the matrix simply by maintaining something close to the old functional form. The authors cite Johnson and Johnson (a $ 5 billion company with 150 independent divisions and each division with average size just over $ 30 million) as a wonderful example of simplicity in form despite size. The divisions are called "companies" which are aggregated into eight groups of up to 20 companies each. The companies in each group have either a geographic or a product similarity. The central staff is small. Contrary to empire building and building multilayered monoliths as manifested by several other companies. Johnson and Johnson have kept their divisions small. The company had 80 divisions ten years ago but now has 150 divisions.

Product divisions are the building blocks in the structure of the excellent companies. A characteristic of structures in such companies is the shifting of people and even products or product lines among divisions on a regular basis and without acrimony.

The simple form is not limited to companies—specialised in creating niches for themselves. Other companies such as HP, Emerson, Digital, Dana and 3M have also simple structures. Regardless of industry or apparent scale needs, virtually all the companies pushed authority far down the line and tried to preserve or maximise practical autonomy for a large number of people. Simplicity in basic structural arrangement actually facilitated organisational flexibility.

Lean staff at the corporate level is a characteristic feature of excellent companies. And whatever staff these companies have tends to be out in the field solving problems rather than being staypat in the home office. Some interesting examples are given below:

- Emerson Electric has 54,000 employees, with fewer than 100 in the corporate headquarters.

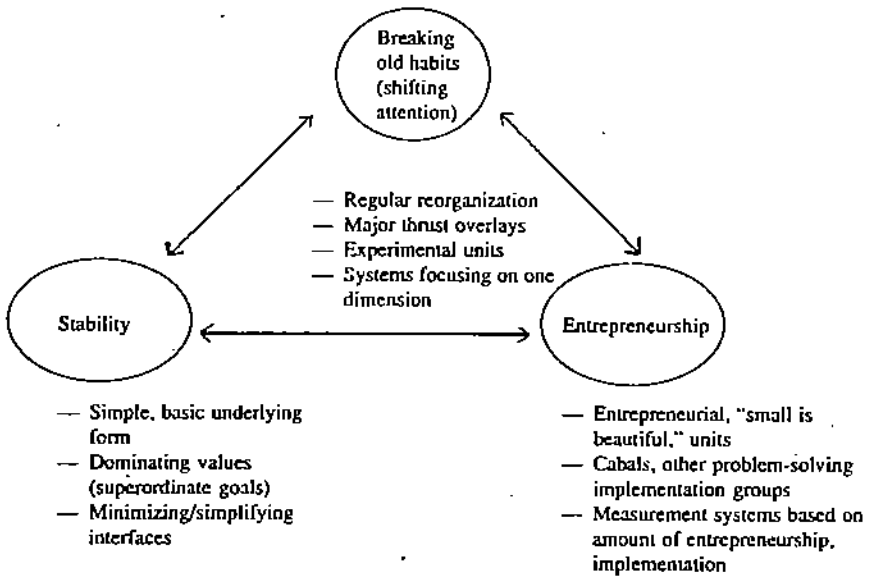
- Dana employs 35,000 employees and has cut its corporate staff from about 500 in 1970 to around 100 by 1982.
- Schlimberger, a $ 6 million diversified oil service company, runs its world wide empire with a corporate staff of 90.

That "less is more" also holds true for some of the top performing smaller companies. "ROLM, for instance, manages a $ 200 million business with about 15 people in corporate headquarters. "Virtually every function in the excellent companies is radically decentralised, down to the divisional level at least." Though strategic planning is regarded as a corporate function, yet, some companies such as 3-M, HP, J & J have no planners at the corporate level. Fluor runs its $ 6 million operations with three corporate planners.

In some excellent companies the research staffers come in from line operations and then go back after sometime. "At IBM, management adheres strictly to the rule of three year staff rotation. Few staff jobs are manned by career staffers". The others are manned by line officers. "If you know you are going to become a user within thirty six months, you are not likely to invent an overbearing bureaucracy during your brief sojourn on the other side of the fence."

A structural form for the future (i.e. for 80s since the book came in early eighties), according to authors, should respond to three prime needs or properties: a need for efficiency around the basics (stability pillar); need for regular innovation (entrepreneurial pillar), and a need to avoid calcification by ensuring at least modest responsiveness to major threats (habit breaking pillar). The structural form, the authors suggest, should be based on these three pillars, each one of which responds to one of the three basic needs. The idea about the structural form for the future is dipicted in Figure 4.11.

Figure 4.11: The Three Pillars of the "Structure of the Eighties"



Source: Peters and Waterman, p. 316.

The authors further say that an effective structure should have loose-tight property simultaneously. It is in essence the coexistence of firm's central direction and maximum individual autonomy which the author call "having one's cake and eating it too." Organisations that live by the loose-tight principle do so through "Faith", through value systems. Belief in customer, belief in granting autonomy, belief in quality are some of the values which great managers have demonstrated in their lives.

4.10 SUMMARY

Successful implementation of strategy, among several other factors, depends upon the appropriateness of the organisation structure. The latter must meet the needs of the strategy. The various forms of organisational structuring may not be equally supportive of a particular strategy at hand. In designing an appropriate structure, tasks and functions which are critical to the achievement of strategy must be first identified. The organisation designer should then

think of other supporting and routine activities which are connected with the critical tasks and place all these in one unit. In this way various building blocks would be formed. The management has also to decide about two other questions i.e., what degree of authority has to be delegated to the managers of various units or components and how coordination has to be brought about?

Though strategy and structure are interactive and interrelated, it has been often observed that structure follows strategy. Since structure is a tool to realise the aims of strategy, it helps people pull together in the performance of their diverse tasks to accomplish those aims. The experience of many firms indicates that organisation structure evolves through different stages. The Stages Model provides useful insights into why structure tends to change in accordance with changes in size, geographic spread, technologies, and strategies of an enterprise.

Various forms of organisation structuring are available: Functional, Product Divisions, Strategic Business Units, Holding Company, Matrix, etc. Each form has its benefits and limitations when looked from a particular strategy point of view. There is nothing like the "best" or ideal structure. The best organisation structure is the one that best fits the overall situation.

What structure will be suitable for a multinational enterprise would depend upon the nature, stage of growth, extensiveness of operations, needs for strategic controls of the parent company and ground realities that prevail in the countries where its operating units or subsidiaries function. The various forms that could be considered are: mother-daughter type structure, international division, global product structure, global area structure, and matrix structure.

For development programmes of the government, various forms such as functional, matrix and network structures can be considered. Though the structures of the agencies in charge of implementing government development programmes tend to be functional or hierarchical in character, it is the task and strategic requirements of the programme that should determine the structure.

In this unit we also acquainted you with two perspectives on Strategy and Structure; one by Porter and the other by Peters and Waterman. Porter asserts that different strategies envisaged by him (Cost Leadership, Differentiation, and Focus) need different organisational arrangements, and control procedures. Not only this, he further says that as industry transitions to maturity, different organisational structures, systems and values are needed. Peters and Waterman, based on their study of excellently managed companies in the USA, document evidence on the type of structure used by such companies. They found that many such companies used simple structures. The product division structure was by for the most popular. The staff at the corporate level tended to be small. A structure for the future, in their view, should satisfy three prime needs: need for efficiency around the basics (stability pillar); need for regular innovation (entrepreneurial pillar); and need to avoid calcification (habit breaking pillar).

4.11 KEY WORDS

Strategy related Critical Tasks: Tasks which are critical to the success of strategy of the organisation. Such tasks must be performed exceedingly well for the strategy to succeed.

Stages Model of Structure: The proposition that organisation structure evolves through different stages (Stage I to IV).

Holding Company: A company which has one or more subsidiary companies. A holding company is not an original structural form. It simply represents relationship (legal or otherwise) that would subsist between companies belonging to the same group. The holding company and its subsidiaries themselves are organised on the basis of one of the basic forms (e.g., functional, product divisions, etc.).

Mother-daughter Type Structure: A form of organisation used by (European) multinational companies where relationship between the parent company and the subsidiaries is informal, personalised and where most of the staff on important positions is appointed by the parent company.

International Division: A division (in addition to domestic divisions) created by a multinational company to which all operating units (subsidiaries) in foreign companies report for performance based on formal procedures. Accountability thus can be fixed for performance.

Global Structure: A kind of structure used by multinational companies. A global structure can be either a global product structure or a global area structure. *A global product structure* is one where primary responsibility is assigned to international product managers with a world-wide mandate for specified products. Under a *global area structure*, the firm's operations are segmented geographically into several regions of the world.

Matrix Structures: In the context of multinational organisations, under a matrix structure authority and responsibility are assigned along at least two dimensions which are often product and region.

Network Structure: Under network structure a lead agency creates a network of relevant public and private agencies which have an influence on a development programme initiated by the government.

4.12 SELF-ASSESSMENT QUESTIONS

1) Why is the question of appropriateness of an organisation important for management?

2) "Each strategy rests on a set of key success factors". What is meant by the key factors? How would you identify them?

3) While distributing authority to various units of the organisation, what general considerations you would bear in mind?

4) In what ways would you provide for coordination for several units of the organisation?

5) Explain the thesis that 'structure follows strategy'. Express your own views on this.

6) Explain the Stages Model of structure. Is it necessary for an organisation to pass through all successive stages of growth?

7) Compare and contrast the strategy related benefits and shortcomings of the functional and product division forms of organisation. Which form would be suitable for what kind of strategy?

8) How can a product divisional organisation be converted into an organisation having strategic business units? What motivates the company to have this kind of arrangement?

9) What is a holding company? Discuss the strategy related benefits and limitations of this form of organisation.

10) "For most of the large and diverse organisations, the matrix is the answer." Do you agree with the statement? Discuss the pros and cons of this type of organisation structure from the strategic point of view.

11) "No organisational form can be ideal in all situations". Elaborate the statement and offer your views.

12) Briefly describe the various structural forms a multinational enterprise can use. Discuss their related merits and demerits from the point of view of strategic management.

13) What structure is generally used by development programme agencies and why? Under what conditions decentralised structures become desirable?

14) What organisational arrangements are required for different types of strategies as cited by Michael E. Porter?

15) a) Discuss the main findings of the study by Peters and Waterman on structure and related matters.
    b) The structural form for the future, according to Peters and Waterman, should rest on three pillars. What these three pillars are and what do they indicate?

16 Write short notes on the following:
   a) Network structure
   b) Global structure
   c) Mother-daughter type structure
   d) Matrix structure

4.13 FURTHER READINGS

Chandler, Alfred D., 1962, *Strategy and Structure*, MIT Press, Cambridge, Mass.

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APPENDIX-I

Development Programmes: Some Guidelines for Structural Choices

First, one must analyse the critical features of a programme's environment and strategy. The choice of the structural form, degree of decentralisation and autonomy can be derived from such an analysis. The questions posed below should be followed up by a detailed analysis.

Environment and Strategy

1) How large is the programme? Is its size and geographical spread such that control through hierarchical authority will be feasible?

2) How diverse are the beneficiaries? Do they have significantly different needs and problems in relation to the programme?

3) Can the inputs for the programme service be organised within the purview of the programme agency? If not, will it have to depend on the active collaboration of a variety of agencies to obtain and integrate the needed inputs?

Structural Forms

1) What is the best way of differentiating the tasks or activities of the programme (by function, service, region, or a combination)?

2) What are the best integrative mechanisms which can be derived to pull together the subdivided tasks?

3) If the programme must make use of the matrix form, what steps should be taken to ensure that dual authority will be accepted in the organisation?

4) If the network structure is adopted, what sources of influence are available to the programme agency to make it work?

5) What role can the programme offer non-governmental agencies (private, co-operative and beneficiary groups) in the network for the planning and delivery of services?

6) Does the nature of the strategy require that the structure be placed outside the purview of any single ministry? If so, who in government should be responsible for the programme?

Decentralisation

1) Does the diversity among beneficiaries call for considerable local adaptation of the programme service?

2) Does response to the needs of beneficiaries require speedy decisions and actions at the local level?

3) Does the design of the service have to be made in consultation with beneficiaries at the grassroots level?

4) Is participation by staff and beneficiaries in planning and implementation likely to contribute to improved programme performance?

5) If answers to the above questions indicate the need for a decentralised structure, what are the specific functions to be decentralised? Why?

6) Which functions should be centralised? Why (economies of scale, specialised knowledge)?

7) Assuming that decentralisation is desirable, will the programme have enough trained manpower to manage a decentralised structure? If not, can the structural change be phased over time?

8) Do the gains of decentralisation outweigh its costs?

Autonomy

1) Will programme performance be hurt if departures from government norms, practices and decision-making process are not feasible?

2) In which areas of management are such departures most critical (financial, personnel, policy making, etc.)? Why?

3) How far can legal autonomy provide the needed flexibility?

4) If there are limits to legal autonomy, are there ways of inducing or earning additional autonomy?

5) What measures of performance (outcomes, services, efficiency indices) can be provided to the government to facilitate its monitoring and review functions?

6) If adequate autonomy cannot be obtained, what can be done to minimise performance problems by assigning additional responsibilities in the structure to beneficiaries and non-governmental groups in the planning, implementation and resource generation of the programme?

Source: Paul, Samuel, Strategic Management of Development Programmes, International Labour Office, Geneva, 1983, pp. 89-91.

NOTES

NOTES

Uttar Pradesh
Rajarshi Tandon Open University

Strategic Management

Block

2

STRATEGY AND LEADERSHIP

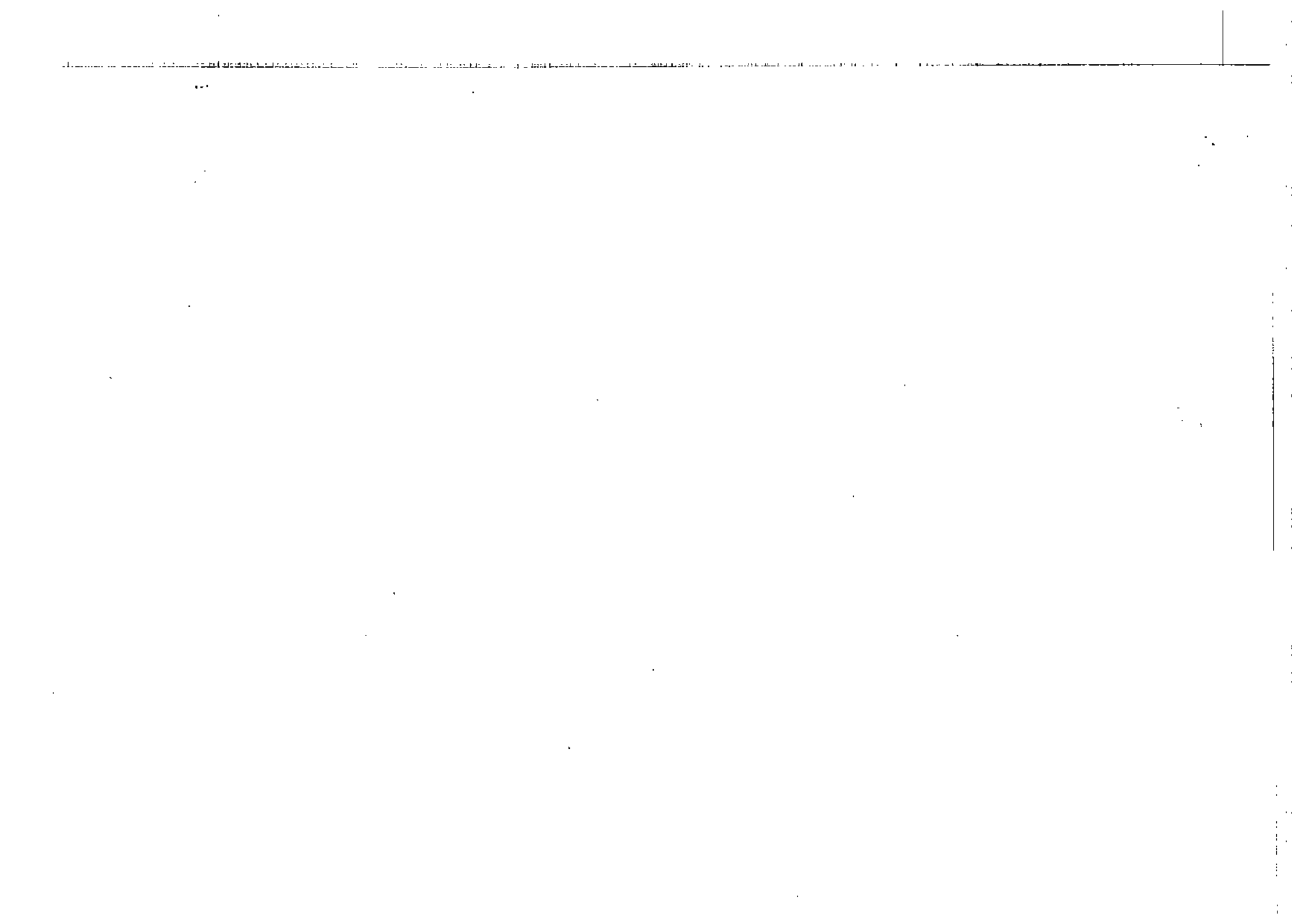
BLOCK 2 STRATEGY AND LEADERSHIP

Leadership is the key to strategic management. The quality of strategic plans and the effectiveness of their implementation depend on the quality of leadership at all levels of management. There is no gainsaying that leadership is the very source of all planning and implementation of policies. The purpose of this block is to highlight the role of leadership in strategic management. This block has three units.

Unit 5 explains the role of leadership in raising productivity in organisations. Leadership is defined and various views on what leadership is are discussed. The functions of leaders are explained. The unit concludes with a brief discussion on why good leaders are so scarce.

Unit 6 explains that leadership has both form and substance. The effectiveness of a leader depends entirely on the quality of the man as reflected in his universal inner structure. Style is only an expression of the quality of a leader. This unit explains the various components (or qualities) of the inner structure of a good or effective leader. Particular emphasis is placed on handling people because it is here that the effectiveness of a good leader is truly tested.

Unit 7 suggests some time-tested techniques for strengthening the universal inner structure of effective leaders. It begins with a brief discussion about whether leaders are born or made but then quickly the focus is shifted to a discussion on how potential for leadership can be improved.



UNIT 5 STRATEGIC MANAGEMENT AND LEADERSHIP

Objectives

The objectives of this unit are to :

- explain the role of leadership in strategic management
- discuss what leadership is
- acquaint you with the various functions the leaders perform
- explain why good leaders are so scarce.

Structure

5.1 INTRODUCTION

Management education has recently been under severe criticism. The awareness about its inadequacy was focused by two Harvard professors who wrote an article in Harvard Business Review in 1980 on "Managing our way to Economic Decline". Essentially, this awareness is germane to the fact that the Japanese who do not have a formal system of business education are literally overtaking the Western countries in every sphere of enterprise management. Some industrial houses, even in India, have taken a decision to severely limit the number of MBAs that they hire. Serious introspection is taking place as to why business education is not meeting the requirements of the industry.

The answer seems to be emerging quite loud and clear. Prof. William E. May, the Dean of the largest business school in the USA, in New York University, concluded that "too often schools of management have concentrated on teaching people to count rather than teaching that people count". The well-known book in "Search of Excellence" concludes that every company that has maintained its excellence over the years has done so because it had "a leader or two" who gave it its culture. This conclusion has since been reinforced in a recent study by the Stanford Research Institute. It concluded that "12 per cent of effective management strategy is knowledge and 88 per cent is dealing appropriately with people". Indeed, dealing appropriately with people is **Leadership.**

We know instinctively that in every human activity involving a group of people there is a need for the guiding hand of a leader. The head of a family is the most ubiquitous leader since the dawn of human history. It is well accepted that on the quality and effectiveness of this leader, be it father or the mother, depend the progress and fortunes of the family.

In the modern complex society thousands of individuals are appointed or elected to shoulder roles and responsibilities of leadership at junior, middle and senior levels in factories and farms, schools and colleges, business and financial institutions, dispensaries and hospitals, in civil and military organs of the State's scientific and

research institutions and so on. On their quality and effectiveness depend the strength, prosperity and happiness of society. In history an effective leader has always been a 'force multiplier'.

Here in this unit we present to you a holistic and practical approach to leadership.[1] The objective of this unit is not confined to merely imparting of knowledge. Its real purpose is to encourage you to embark on an action programme of self-development, so that you can enhance your potential to the maximum extent possible, and become agents of change in your organisation.

It is well to remember that leadership cannot be taught. However, a man does have the capability to transform himself—to reprogramme his personality. And, it is here, that the most exciting part of human endeavour lies. The fact that you have chosen to study, shows that you do have the motivation to improve yourself. This unit will show how you can become the master of your destiny if you are willing to put in the effort to become an effective strategic manager.

5.2 ROLE OF LEADERSHIP

In India, the Management Development Institute, Gurgaon which runs the National Management Programme, undertook a survey of the need for leadership training in Public and Private enterprises. Chief Executives of the leading companies were requested to give their views. Two major conclusions emerged from this survey which have a direct hearing on **strategic management**. These were :

- We could improve productivity in India by 30 to 40 per cent without extra finance or new technology if only we could improve the leadership abilities of our executives.
- Leadership theories and styles which are taught in management schools are not very useful to improve leadership. Practical approach to leadership should be the basis for any training, so that the executives can improve their effectiveness.

In the prevailing environment in India, it is often argued, that things can improve only if the top leadership in the country sets the right example. Alternatively, the educational system should be reformed so that slowly perhaps in 50 years, things may improve. Both the views do have some theoretical merit: but do not appear to be practical.

Consequently the only way is to find a method of improving the leadership potential of those already shouldering responsibilities and of those who are getting ready to enter the field of leadership in any walk of life. This is the basic philosophy of the practical and holistic approach to leadership—**'it is perfectly possible to improve myself; I can hope to improve others only by personal example'** is its message.

Consequently, the key of effective Strategic Management is to ensure that leadership runs like a uniform thread through all functions of management to integrate them into a culture of excellence. One of the primary needs for effective strategic management is to understand, in practical terms, the meaning of leadership, its functions; and, finally to ensure that effective leaders are groomed and developed at every level in an organisation. Only then will strategic managers be able to conceive strategic plans and translate these plans into reality.

Activity 1

Has there been any change in the top leadership of the organisation with which you are associated? If the answer is affirmative, explain in what ways it has affected the quality of strategic decisions and overall productivity.

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5.3 WHAT IS LEADERSHIP ?

However, when it comes to evolving a definition or a theory of leadership we run into difficulties. "If we know all too much about our leaders, we know far too little about leadership—Is it essentially inspiration? Is the leader a definer of values? Satisfier of needs? If leaders require followers, who leads whom, from where to where, and why? How do leaders lead followers without being wholly led by followers? Leadership is one of the most observed and least understood phenomenon on earth—a recent study turned up 130 definitions of the word"[2]. The number has since increased to more that 350.

Academically, all the questions raised by the author quoted above merit consideration. And that is what the scholars have been doing. They have undertaken useful research on various constituents of leadership. However, despite Maslow's very perceptive diagnosis, almost a quarter of a century ago, an integrated view on this vital and age-old function in human society has not yet crystallised. Commenting on group dynamics laboratories Maslow observed :

> "What I smell here is again some of the democratic dogma and piety in which all people are equal and in which the conception of a factually strong person or natural leader or dominant person or superior intellect or superior decisiveness or whatever is bypassed, because it makes everybody uncomfortable, and because it seems to contradict the democratic philosophy (of course, it does not really contradict it)".[3]

Maslow made the above remarks as he was fully aware that there were serious reservations among intellectuals and scholars to the very concept of leadership. Ever since French revolution the academic community had assiduously tried to devalue leadership as it had got associated with aristocracy and feudalism and was thus regarded to be out of tune with the democratic ethos of equality. Equality of opportunity, which is the real sense of democracy, somehow got extrapolated to equality of capability. It was overlooked that even two brothers with common heritage are not equal in their capabilities. Potential for leadership has no relation to parental stations in society. Many of the outstanding leaders in history belonged to non-affluent background.

Ralph Stogdill, Fiedler, Hersey and Blanchard, have made useful contributions to understand various facets of this complex phenomena. A view that is emerging in the late eighties is relevant to the study : "McClelland, Hall, Peters and Waterman, Jaques, Bennis—have been working on their parts of the puzzle. I believe that we are, however, ready to start assembling the parts"[4]. It is time that we took a practical and holistic view of this ancient human capability on which, depends the success or failure of strategic plans in any human activity.

The fact that the literature on leadership has more than 350 definitions of the word, indicates that it is a complex process. However, its essential nature is the ability to get the best out of people.

The definition which has the touch of practical common sense is the one evolved by a medical doctor—Lord Moran. He was the medical officer of a British Infantry Battalion during World War I. For two long years he served the Battalion in France and saw how young officers inspired their fellow citizens to fight the Germans with enthusiasm and courage, knowing fully well that, many among them would get killed or maimed. He wondered how one individual could exercise such a decisive influence over others. It was not just the military law or discipline, because despite these there were examples of demeaning cowardice and inability to lead. About two decades later he rose to become the Chairman of the British Medical Council and later, during World War II, he was the personal physician to Sir Winston Churchill, the war time Prime Minister of Great Britain. In that unique capacity he had a ring-side seat to observe the top leaders of the world in every human activity—politics, industry, military, labour and so on. Given below is a definition which is based on what he evolved :

> **"Leadership is the capacity to frame plans which will succeed and the faculty to persuade others to carry them out in the face of all difficulties".[5]**

The definition has two parts. The first deals with the capacity to frame plans (programmes, projects or whatever) that have a high probability of success. This

implies that a plan should reflect a leader's grasp and feel of the quality of his resources and the environments in which the plan has to be implemented. The second part of the definition deals with the implementation of the plan by persuading others to do what is really expected of them, despite difficulties, discouragement and obstacles. Indeed, it is this capacity which, as per the Stanford Research Institute, counts for 88 per cent of strategic management.

In daily parlance the above definition can be explained in very simple terms. In any situation, no matter at what level or how complex it amounts to :

knowing what to do + GETTING THINGS DONE.

The difference in the size of letters in the two parts indicates the relative importance of the two components of the leadership process. The faculty to get a plan implemented is by far the more important, and indeed the more demanding component. In management terminology leadership can also be expressed as :

capability + EFFECTIVENESS

What is the make-up of a man who can live up to the definition of Leadership? Before we examine this crucial question it would be appropriate to take an overview of the leadership process as a whole, the functions of a leader and why there is a scarcity of good leaders.

5.4. PROCESS OF LEADERSHIP

In keeping with the contemporary culture especially of the West, there has been a frantic search for 'quick fix' and 'instant' techniques to become a leader (managerial effectiveness is the term used for leadership in the management literature). Almost for six decades persuasive literature on leadership theories, styles, attitudes and behaviour, has been marketed for aspiring executives to become effective leaders. While doing so the very essence and core factor of leadership—the virtues of human character which equip a man for real leadership—were sidetracked.

In this quest for short-cuts, the realisation that there is no easy or quick recipe to become an effective leader is, at long lost, dawning on scholars as well as practitioners. "If I try to use human influence strategies and tactics of how to get other people to do what I want, to work better, to be more motivated, to like me and each other—while my character is fundamentally flawed, marked by duplicity and insincerity—then in the long run I cannot be successful. My duplicity will breed distrust, and everything I do—even using the so-called human relations techniques—will be perceived as manipulative. It simply makes no difference how good the rhetoric is or even how good the intentions are; if there is little or no trust, there is no foundation for permanent success. Only basic goodness gives life to techniques".[6]

It is for this very reason that the Indian experience of enduring leadership which has sustained our civilisation for almost 6000 years is relevant. Our dictum has been that a good leader is one whose thoughts are pure and there is complete harmony in his thoughts, words and deeds. A man who says what he thinks, and does what he says, is always trusted; that indeed is the man who can lead others. And, it is only a man of character who can adhere to these principles. Anyone who picks up tools and techniques of human relations, communication eloquence, public relation image or styles of effectiveness may get some short-term results. However, under stress and strain such shallow abilities crumble and the true motives of the man show up destroying all human relations. Indeed, it is "character that communicates most eloquently. As Emerson once put it—"What you are shouts so loudly in my ears that I cannot hear what you say".[7]

On an analysis of management eras during the current century, the 90s have been designated as the 'era of leadership'. It is a development which emphasises the rediscovery of leadership as the key factor in the excellence of families, organisations, communities, nations, indeed, the world. It is, therefore, appropriate to briefly explain the correlation between management and leadership.

The best and the most realistic explanation is that management is a tool of leadership. The national bestseller during 1989-90 in the USA, "The 7 Habits of Highly Effective People" which is regarded as the hand-book of leadership in the USA, has this to say about this correlation—"Management is a bottom line focus. How can I best

accomplish certain things? Leadership deals with the top line. What things I want to accomplish. In the words of both Peter Drucker and Warren Bennis 'Management is doing things right; leadership is doing the right things'. Management is efficiency in climbing the ladder of success; leadership determines whether the ladder is leaning against the right wall".[8]

It is in the above climate of quest for short-cuts that the distillate of the entire leadership process was given out by the Chancellor[9] of Sri Sathya Sai University in just four words. This has now been well accepted as the 'mahavakya' of leadership in the march of humanity towards the unity of man, global economy and earth citizenship. It is :

TO BE : TO DO : TO SEE : TO TELL

Diagrammatically, the mahavakya and the relative importance of its four components are shown in Figure 5.1.

Mahavakya : Leadership Process

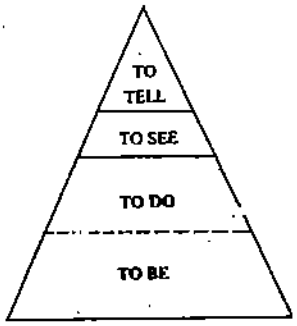

Figure 5.1

TO BE is the source of leadership :

TO DO is the style of leadership by personal example

TO SEE and **TO TELL** are the functions, tools and techniques of leadership.

TO BE means the aggregate of all that there is in a leader and gives him a distinctive identity, his values, his qualities, and his knowledge : in other words, his personality. 'TO BE' is the beginning and the end of leadership [10]. This sentence articulates the historic truth that the potential and effectiveness of a leader is in direct proportion to the strength of his personality. That is why 'TO BE' is the most important component of the leadership process. Consequently, the holistic and practical approach to leadership expounded in these units on leadership lays emphasis on TO BE aspect of the leadership process. The universal constituents in the personality of effective leaders are explained in Unit 6 and the techniques to reinforce these constituents are contained in Unit 7 of this block.

The soil on which the sapling of leadership grows effectively to become a strong and sturdy tree, has to be carefully prepared and de-weeded. The weeds that a leader has to completely uproot from his personality are—passion, anger, greed, attachment, egotism and jealousy.

To change and even re-programme human personality is perfectly possible. It can be achieved, by any individual, but it is one of the most difficult tasks, and precisely for this reason, one of the most satisfying human endeavours. Very strong WILL POWER is required to succeed in this effort (see Section 6.5 for more about will power).

TO DO indicates that the best style of leadership is to lead by personal example. Style is the reflection of the substance in a man—his personality. Personal example can be set only if the TO BE of the leader is worthy of emulation. This reality is depicted by a perforated line between TO DO and TO BE in Figure 5.1. Mahatma Gandhi set personal example for eradicating untouchability in India by actually living in harijan colonies and mixing with them. Personal example is transparent, and the most potent technique of influencing people. Hence, it is rightly called the method of silent persuasion.

TO SEE implies that a leader must be in complete touch with the realities of the situation in which he is operating. He should have the fullest possible information regarding the problem, about which a decision and a plan has to be formulated. Only then can he make a sound decision. It also involves going out and seeing things oneself on the ground. "You cannot sit in an air-conditioned office and make decisions".[11] **TO SEE** is even more important at the implementation stage of any work. There are always difficulties and obstacles in the way of implementing any task. Therefore, a proper feed-back and overseeing the progress of work on the spot are essential to overcome these problems, by taking spot decisions about adjusting the plan, allocation of resources or whatever.

TO TELL means communicating to others what the leader wants them to do. Telling is effective if the instructions of the leader are clearly understood. This happens when communication is through the heart and not merely through the lip or by means of paper. And communication through heart depends entirely on the strength of 'TO BE' and 'TO DO' of the leader. If his personality is composed of good qualities and sound knowledge, and he leads by personal example, then very few words are necessary to convey what a leader wants to be done. In the ultimate analysis, character communicates more eloquently than anything we say or do.

In the entire process of good and effective leadership, selfless love plays a decisive role. It is always useful to remember the well-known comment on selfless love.

Love lives by giving and forgiving

Self lives by getting and forgetting[12]

A question is often asked if leadership qualities required in managing enterprises in the public and private sectors are similar; whether military or spiritual leadership has any correlation with leadership in other fields. The conclusion of the Stanford Research Institute study that, 12 per cent of effective management (leadership) strategy is knowledge and 88 per cent is dealing appropriately with people, is very relevant to these questions. 88 per cent of the leadership capability is virtually common to all fields. Add to this the 12 per cent of knowledge of the field of a leader's work, then leadership becomes specific to that particular field. That is why some of the outstanding leaders in the world have been effective in more than one field. In soldiering, and statesmanship one can count—Lord Rama. Emperors Ashoka and Akbar, Shivaji, Oliver Cromwell, George Washington, Bismark and Churchill.

Let us now look at the functions of leadership, before we discuss the Universal Inner Structure of Effective Leaders.

5.5 FUNCTIONS OF LEADERSHIP

In practical terms a leader has to achieve the task (mission, objective or goal). For doing so, he has to build his team as a cohesive group and develop every individual in the team to give his very best. Consequently, he has to harmonise and integrate the needs related to the accomplishment of the task with those of the group he leads and individuals in the group. This is best explained diagrammatically by depicting these needs in three linked circles, as shown in Figure 5.2.

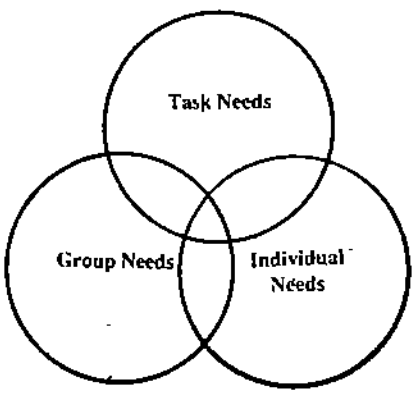

Figure 5.2 : Functions of Leadership[13]

1) **Functions for Task Needs**
   - Defining the task
   - Making the plan
   - Allocating work and resources
   - Controlling quality and tempo of work
   - Checking performance against plan

2) **Functions for Group Needs**
   - Setting standards--example
   - Maintaining discipline
   - Building team spirit
   - Encouraging, motivating, giving a sense of purpose
   - Appointing sub-leaders
   - Ensuring communication within the group
   - Training the group

3) **Functions for Individual Needs**
   - Attending to personal problems
   - Praising of individuals
   - Knowing individuals personally
   - Recognising and using individual abilities
   - Training individuals

The functions related to the needs of the three areas have been listed separately for easy understanding. In actual practice, however, most of these are integrated in the following steps :

- Planning to achieve the task by using the available resources and people
- Initiating work by allocating tasks and resources
- Controlling by monitoring the work; modifying plan
- Supporting by encouragement and by motivating and training
- Evaluating.

Activity 2
The above section dealt with the functions of leaders. What functions you think are the most important from strategic management point of view and why?

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5.6 WHY GOOD LEADERS ARE SCARCE ?

There are three major reasons for the current scarcity of people who can measure up to the definition of an effective leader, discussed earlier. In particular, when it comes to implementing any plan or project we find serious shortcomings among executives in India. It is important that you are aware of the major causes of this situation to be able to handle problems in your place of work with pragmatic wisdom. The three causes are :

- Bringing-up during childhood
- Environmental
- System of education

Bringing-up during Childhood : The level and quality of achievement in life depends on the values and attitudes imbibed in childhood. Sometime back a scholar carried out a study as to how an Israeli mother and an Indian mother handle a child when it

learns to walk. This study brings out several characteristic differences in perception of Israel *vis-a-vis* India which are worth careful study. An Israeli mother stands at the other end of the room and encourages the toddler to walk towards her. If, on the way, he topples she does not rush to pick him up even if he is crying. Instead, she encourages him to stand up and walk again on his own. When he finally reaches her she gives him all the love and affection. On the other hand, most Indian mothers handle the same situation differently. They too encourage the child to walk. However, if on the way he topples, falls and cries then they rush to pick him up. That is not the end of the story. They start beating the floor and saying "naughty floor has hurt my child". At this, the child stops crying. At the same time, he also gets a firm conviction in his mind that "if any misfortune were ever to happen, or in the event of failure, he could put the blame on somebody else!"[14]

Youngmen who have such an attitude firmly ingrained in their personalities from childhood are unsuitable material to lead others. Fortunately, there are numerous mothers in India who do bring up their children to inculcate self-reliance and other good qualities and traits in them. However, there is a great need to spread this essential awareness in the society.

Environmental : It is a historical phenomenon that when societies modernise they go through convulsions of change. The change can be a violent revolution or a turbulent period of adjustment. The main feature is that every group in society and, ultimately, every individual in the group, tries to, grab as large a share of the cake for himself as possible without caring for other's requirements. Morality, ethics and values thus become a casualty. Social forces confront each other nakedly and savagely. "Each group employs means which reflect its peculiar nature and capability. The wealthy bribe; students riot; workers strike; mobs demonstrate; and the military coup."[15]

What we see in India is this rather obnoxious phenomenon in full operation. In such a suffocating environment even those leaders who have some ethics and values left in them find it difficult to operate. However, all is not lost. Even in such a murky climate, there are dedicated and honest leaders who have created islands of excellence in almost every walk of life—business, enterprise, farming, hospitals, education administration, voluntary work, military and other organs of the state. They have done so by practising the simple yet adorable dictum—"It is better to light one candle than to curse the darkness".

The hopeful feature about the pains of change is that it is not permanent. Sooner or later society finds its equilibrium—sooner, if people are made aware of the need for good leadership and its potential.

System of Education : On obtaining independence we inherited an educational system which was designed by Lord Macaulay to produce good subordinate staff to support the British colonial law and order administration. Unfortunately, we have even diluted and corrupted that system to such an extent that, let alone grooming leaders for the future, we cannot even get subordinate staff of any calibre or commitment. Barring a few universities which are trying against great odds to maintain some standards, the degree is no indication at all of a young man's scholastic or other abilities. Even among the good centres of education the emphasis is on individual achievement of high grades in an examination. No attempt is made to build character of students nor to practise them to work in a team. To appreciate the value of good education in grooming leaders it is appropriate to examine an example from history.

During the 18th and 19th centuries, the British were able to carve out the largest empire ever created in history. It used to be said that the sun does not set on the British empire. How did they do it? Analysis shows that the factor which contributed the most in this achievement was the educational system which the British adopted. The system was the result of a conscious decision when they realised that their society had seriously degenerated. They undertook to inject moral values through their educational system.

Today the public school system is rather a dirty word in India and even in England to a lesser extent. But when it was originally conceived and evolved, it was meant not for the wards of moneyed parents, but for promising boys from all strata of society. In essence, the system was a westernised version of the ancient Gurukul system of India. The sons of both the kings and commoners were taken away from parental care to a boarding house, and groomed on the basis of two important principles.

First, to let the children grow in an atmosphere of complete social equality. Parental clothes were taken away and all children had to live and work in the school uniform. They slept in same type of beds, mixed together without let or hindrance, ate the same food, had exactly the same facilities in hostel, and above all a very frugal and strictly controlled uniform pocket money. In such a strict environment the children developed their potential without inhibitions or social hang-ups or handicaps related to their parent's station or status in society.

Second, building character of the boys received the highest priority. In every facet of life in the school related to living, studying, games and extra curricular activities much more emphasis was placed on team work than individual achievement. Great values like truth, sustained hardwork , loyalty, honesty, integrity, courage and determination were imparted in the day-to-day functioning. In short, boys were groomed to be the future leaders in the society and the nation.

The intrinsic value of this system of education was that it "made a boy independent. He left home early and had to look after himself. He learnt to believe that there was something praiseworthy about enduring hardship without complaint. He was taught to own a fault and take punishment without bearing a grudge... he learnt that to command he must be just and impartial, and must put the comfort and safety of those under him before his own".[16]

To develop effective strategic managers it is important that executives should understand the "Universal Inner Structure of Effective Leaders". They can then improve their own potential, as also encourage and groom others in their organisation to become effective leaders.

Activity 3
Suggest some ways and means by which scarcity of good leaders can be overcome? Discuss the question with your fellow students, colleagues and note down below the main points that emerge.

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5.7 SUMMARY

This unit highlighted the role of leadership in strategic management, particularly in improving productivity. The key to effective strategic management lies in ensuring the integration of the functions of management into a culture of excellence. This in itself is a great challenge for leadership.

The task of a leader is to build his team as a cohesive group and develop every individual in the team to give his very best. He has, therefore, to integrate the needs related to the group he leads and individuals in the group.

Whether leaders would be available in sufficient number in any society would depend upon how individuals are brought up in their childhood, the nature and quality of environment the individuals face and the system of education. The scarcity of right leaders in India can be attributed to faults on all these three fronts. Therefore the remedy lies in instituting right practices in childhood, improving the environment and the system of education.

5.8 KEY WORDS

Leadership is the capacity to frame plans which will succeed and the faculty to persuade others carry them out in the face of all difficulties.

Task Needs are needs that are related to task. Such needs include defining and making plans allocating resources, controlling the quality and quantity of work against plans.

Group Needs are needs that are related to the work group and include setting standards, building team spirit, motivating and ensuring communication.

Individual Needs are needs that relate to individuals in the groups and include attending personal problems, knowing individuals personally, and recognising their abilities.

5.9 SELF-ASSESSMENT QUESTIONS

1) "12 per cent of effective management strategy is knowledge and 88% is dealing appropriately with people". Do you agree with the statement? Explain what does the phrase "dealing appropriately with people" imply and include.
2) Critically evaluate the modern formal education in management. What changes would you like to suggest and why?
3) Discuss the role of leadership in :
   a) strategic management
   b) improving productivity
4) Explain your own concept of leadership. How is it different from the one used in this unit?
5) What are the different functions of leadership?
6) What factors affect the supply of good leaders? Critically examine these factors in the Indian context.
7) "There is a scarcity of good leaders in India". Do you agree with the statement? Suggest some measure by which the supply of good leaders can be augmented.

5.10 FURTHER READINGS

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6) Stephen R. Covey in "The 7 Habits of Highly Effective People", Simon and Schuster, New York, 1990. Page 21.
7) Ibid Page 22.
8) Ibid Page 101.

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10) Ibid.

11) Ibid.

12) Ibid.

13) Adair, John in "Action Centred Leadership" McGraw Hill : London, 1973.

14) N. Vaghul, 'Raja Ramdeo Anandilal Podar—Sixteenth Memorial Lecture' at Jaipur on 10th December 1988.

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UNIT 6 UNIVERSAL INNER STRUCTURE OF EFFECTIVE LEADERS

Objectives

After reading this unit you will be able to understand and explain that :

- leadership has a form as well as substance
- effectiveness of a leader depends in a large measure on the quality of the man as reflected in his universal inner structure
- style is an expression of the quality of a leader.

Structure

6.1 INTRODUCTION : UNIVERSAL INNER STRUCTURE

When we study and analyse outstanding leaders in history who have made their mark by doing some lasting good to mankind, a nation, an organisation or a cause, we find that they come in all shapes and hues—the flamboyant, the scholarly, the artistic, the ascetic, the gregarious and the recluse. And yet, when we look deeper into their personalities to find if there is something universal in their make-up we really find that indeed that is so. Their TO BE component in one way or the other, is very strong. Irrespective of the region of the world they belong to, and the era of history in which they had lived, effective leaders who leave a lasting impact after they are gone and continue to exercise positive and inspiring influence on the minds of people, have two things in common; both these merit discussion.

Firstly, it is possible to say, that in the totality of their personality they were gentlemen in the true sense of the word. It is of interest to note that the definition of a gentleman and of 'sthithaprajnya' (man of steady wisdom as described in the Gita) is virtually the same. A gentleman has been described as under by a Western Scholar.

> "An honest man;
> a man with a sense of duties and obligations of his position, whatever it may be;
> a man who tells the truth;
> a man who gives to others their due;
> a man considerate to the weak;

a man who has principles and stands by them;
a man not too elated by good fortune, and not too depressed by bad;
a man who is loyal;
a man who can be trusted".[1]

Secondly, every outstanding leader has an inner hard core in him which is composed of certain universal virtues. If we piece these virtues together, then, the integrated structure that emerges can be diagrammatically shown as in Figures 6.1 and 6.2.

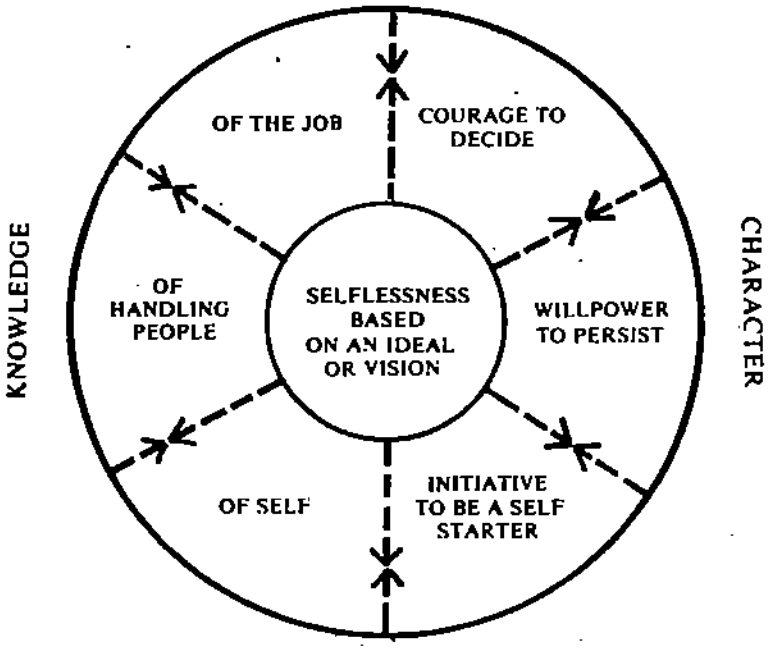

Figure 6.1 : UNIVERSAL INNER STRUCTURE OF GOOD LEADERS

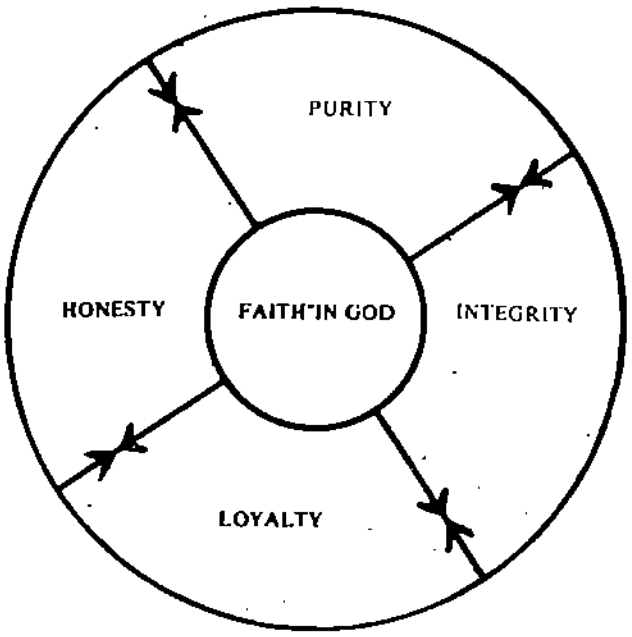

Figure 6.2 : SELFLESSNESS COMPOSITION

6.2 SELFLESSNESS

Selflessness (or unselfishness or self-sacrifice, if you like) is the hub and heart, indeed the very foundation of this structure. Its two other components are knowledge and character. Knowledge helps a leader to determine what to do in any given situation. And the strength of character helps him to get things done by appropriately handling people who have to implement what he wants done. Knowledge and character lend support to each other. Mere knowledge without character makes a man indecisive. Mere character not supported by knowledge, puts a ceiling on a leader's potential. Thus on the STRENGTH and BALANCE of the three components of this structure depend the effectiveness of a leader. His self-confidence is related to this balance; it makes a leader pro-active which means that "We are responsible for our own lives. Our behaviour is a function of our decisions not our conditions. We can subordinate feelings to value. We have the initiative and responsibility to make things happen"[1](a). It is necessary that anyone who wishes to develop his leadership potential to the maximum extent should carefully study this structure and then make a determined effort to strengthen it.

Selflessness (unselfishness) is a relative virtue. Total selflessness is a rather rare phenomenon. When we look for example of men who were completely selfless and lived for humanity at large, we spot Bhagwan Sri Ram, Gautama Buddha, Jesus Christ, Prophet Mohammad, Guru Nanak, Ramakrishna Paramahamsa, Vivekananda, Mahatma Gandhi and the like. The most significant characteristic of these men is that they continue to have a tremendous impact on men's minds even after many centuries. For this study we are just looking at leaders in normal organisations. Even at the working levels of small and big enterprises some executives are more selfless than the others. However in today's self-centred pursuit of careers—the rat race and cut throat competition, the potential leaders are most reluctant to accept selflessness as the very core of leadership. It runs contrary to the current culture adopted from the industrialised countries that the goal of career is to rise fast and grow rich almost overnight. It consequently needs very deliberate reflection to appreciate that the potential for effective leadership in an executive is directly proportional to the degree of his selflessness.

It is essential to realise that selflessness (unselfishness) is the fountain-head of all that is noble in human character: virtues without which it is impossible to influence other. Figure 6.2 shows the composition of selflessness. Selfless man is neither greedy nor looking for short-cuts to get on in life; hence his integrity never wavers. He seeks no unfair advantage over others; hence honesty comes naturally to him. He is not a self-seeker; hence his loyalty is steady and strong. When a man has these virtues then his thoughts, words and actions become pure and well integrated. He says what he thinks and does what he says. That establishes his credibility and he is trusted.

The degree of selflessness in turn is based on an ideal or a vision that he has. It is a well-recognised truism that an ideal, vision or a cause has been the greatest motivator of man in all ages; it is the source of the highly valued virtue in a leader-infectious enthusiasm. The higher the ideal, higher would be the degree of selflessness, hence higher the potential for effective leadership. Swami Vivekananda explained this truth most forcefully when he said "I cannot ask everybody to be totally selfless : it is not possible. But if you cannot think of humanity at large, at least think of your country. If you cannot think of your country, think of your community. If you cannot think of your community, think of your family. If you cannot think of your own family, at least think of wife. For heaven's sake do not think merely of yourself".[2]

The most remarkable example of how selflessness among leaders contributes to build great organisations is from Germany. It is a universally accepted fact that in spite of suffering defeat in World Wars I and II, German Army was professionally the best Army in the World. Even up to the very bitter end of World War II in 1945, it did not lose its cohesion, balance, fighting spirit and dedicated efficiency. A scholar, studying the German General Staff asked Von Moltke about the qualities which they looked for while selecting officers for the German General Staff. Moltke replied "the first qualification has not been so much the possession of any quality as the absence of a quality—the quality of ambition. When with us, if an officer is a climber (one who is interested mainly in self-advancement)—well, we have no further use of him"[3]. They

had adopted selflessness as the cardinal virtue for officers to be members of the General Staff. Their motto was "TO BE THAN TO SEEM". They had merely adopted the truth known to human society since the dawn of history. Two points need to be made to illustrate this :

The Chinese scholar Lao Tzu articulated the eternal truth about selflessness in the following pragmatic and beautiful words more than two thousand years ago.

"True self interest teaches selflessness. Heaven and earth endure because they are not simply selfish, but endure on behalf of all creation. The wise leader, knowing this, keeps egocentricity in check, and by doing so, becomes even more effective. Enlightened leadership is service not selfishness. The leader grows more and lasts longer by placing the well-being of all above the well-being of self alone"[4].

The second point deals with the apparent contradiction between selflessness and the widespread belief that ambition in fact is a good motive force for achievement; that, without ambition a man becomes inert and placid. Consequently, how can one conceive a leader who has no ambition. Was German General Staff made up of faceless men with no fire in their bellies to rise. These are legitimate and logical doubts and should be discussed.

The dictionary meaning of ambition is "aspiration for success or advancement". It is true that it is a powerful motivator and men eager for personal success and advancement are dynamic and can produce very good short-term results. However, it is those who are driven by ambition for ideals and vision who really achieve enduring results. The nature of men, who are ambitious merely for personal advancement, was analysed by Francis Bacon nearly four hundred years ago in his great classic on human nature which is more true now than was the case at that time. He writes (the meaning of some of the old words are given in brackets) :

> "Ambition is like choler (biliousness), which is a humour (disposition) that maketh men active, earnest, full of alacrity and stirring, if it be not stopped. But if it be stopped, and cannot have his way, it becometh adust (burnt up) and thereby malign and venomous. So ambitious men, if they find the way open for their rising, and still get forward, they are rather busy than dangerous; but if they be checked for their desires, they become secretly discontent, and look upon men and matters, with an evil eye; and are best pleased when things go backwards; which is the worst property, in a servant of a prince or the state"[5].

Having explained the nature of ambitious men. Francis Bacon concludes that ultimately the greatest good is done by those who are "more sensible of duty than of rising"[6]—those who can rise above their self-interest.

The more significant contribution to this thought about selflessness in a leader is the great message of the Indian heritage of "nishkamya karma"—doing work with dedication but without being attached to or being bothered about its benefits*

It is this attitude which, ultimately, leads a man to become a "stithaprajnya"[7]—a man of steady wisdom who has control over his senses, mastery over his mind and acts with discrimination through a well-developed intellect.

Organisational Culture to Promote Selflessness. Organisations that value leadership use various techniques to create environments in which executives can rise above their self-interest and are ready to make sacrifices. The "organisational culture" is the management name for such an environment. It is similar to esprit de corps in the Armed Forces. The Japanese have paid a great deal of attention to this aspect. The Chief Executives in some of the most successful enterprises in that country do not spend much time attending to the routine problems. They see their main role to be to attend to 'the good health of the soul of the enterprise'. They spend much time moving among workers and managers to get a feel of their morale and motivation. Why do they do this?

Esprit de corps (good organisational culture) has been defined as "regard for the honour and interest of the body one belongs to"[8]. **A major goal of strategic management** must be to ensure that everyone in an organisation is imbued with a feeling that "no sacrifice is big enough to uphold it's (organisation's) honour and good

* expectation and hope for benefits is the cause of worry, anxiety and restlessness.

name"[9]. Most Japanese Chief Executives, and indeed many others round the globe, feel that their primary role is to create such an organisational culture.

Armed forces round the world have known that leadership is the biggest single factor in determining the fortune of war. They adopt many a measure to inculcate selflessness among their leaders. Some examples merits attention.

When a young man goes to the Indian Military Academy for training he is not referred to as an "officer cadet" or a "probationer" or an "officer trainee". He is designated as a "gentleman cadet" and told day in and day out that he would make a good officer only if he is a gentleman first (we have discussed the definition earlier). It is a well tried-out technique of auto-suggestion that you can influence the character of a person by repeatedly suggesting to him a pattern—'what you think so you become'. The technique does have an influence!

Similarly, most Armed Forces in the world give a lifelong credo to its officers to live by during their service. For example, the US Army officers from West Point Training Academy carry the motto COUNTRY, DUTY, HONOUR to guide them through their career. The Indian Army credo for its officers is very explicit. It commits them to keep their self-interest as the very last item of what they are expected to do:

> "The Safety, Honour and Welfare of the Country come first, always and every time.
> The Honour, Welfare and Comfort of the men you command come next.
> Your own Ease, Comfort and Safety come last always and every time."

The ideal in the credo is that the country comes first, your men next and yourself last, always and every time. It has inspired officers to rise to the greatest heights of self-sacrifice in many a battle fought by the Indian Army throughout the world.

It is appropriate to end the discussion on selflessness with the views of the two great teachers humanity has known.

> "Whosoever wishes to be the first among you shall be your servant."
> —Jesus Christ

> "As long as you are clouded over with this possessive attitude, thinking only of yourself, your family, your people, your things, you can be certain that sooner or later you will be cast into sorrow. You must travel from the stage of identifying yourself with "I" and "mine" to the higher stage where you are constantly identifying yourself with "we" and "ours". From selfishness you must gradually travel to selflessness, from bondage to liberation".
>
> —Gita (Discourse by Sai Baba)

> "A sardar (leader) must be a sirdar" (ready to lay down his head).
> — Swami Vivekananda.

6.3 CHARACTER

Each individual is a bundle of virtues and weakness—of mental and morale qualities. The resulting individuality of a person from this balance sheet is his character, or at times also referred to as his personality.

Historically the quality of character or personality of a man has been the indicator of his potential for leadership. However, researchers in leadership were unable to define and confine leadership qualities within the parameters of research methodology. Consequently, "like the hard questions in an examination paper, the research students have continually deferred them to some future date"[10]. This conclusion is born out by the views of Stogdill himself. He "once told me that he never intended to close off research on the personality of leaders (he hoped to focus it better) but that is what happened"[11].

A very large number of virtues that constitute the character of an effective leader have been listed in the literature on the subject. Napoleon identified as many as 90 virtues essential for a good leader. However, the core qualities which are really important and

which are invariably found in the character of all outstanding leaders are three—courage, determination and initiative.

Character (selflessness being its major component) is the most important single factor which makes for effective leaders. To conclude our discussion of this component of the 'Universal Inner Structure of Effective Leaders', it is relevant to give two examples.

The first one indicates the cynical view about ethics and morality in leadership that prevails in enterprises. A consultant was told by a manager in a paint factory about his boss "I do not trust him, nor does anyone else. He is a slick operator out to get to the very top. He says one thing to your face and another behind your back. He doesn't actually lie, but he deals in half truths."[12] Here was a man dedicated to self-advancement. This boss, when confronted, dismissed leadership as 'kidology' and added "Why should I tell the truth to my people on the way up, when I do not intend to come down again"[13]. This is an example of an enterprise in England even though it appears so very Indian!!

The second example is an experience of General Mathew B. Ridgway a veteran of World War II and highly decorated officer who rose to become the UN Supreme Commander in the Korean War, and the Chief of Staff of the US Army, He says:

> 'Character stands for self-discipline, loyalty, readiness to accept responsibility, and willingness to admit mistakes. It stands for selflessness, modesty, humility, willingness to sacrifice when necessary, and, in my opinion, faith in God. Let me illustrate.
>
> 'During a critical phase of the battle of the Bulge*, when I commanded the 18th Airborne Corps, another Corps Commander just entering the fight next to me remarked—"I am glad to have you on my flank. It's character that counts". I had long known him and knew what he meant. I replied: "That goes for me too". There was no amplification. None was necessary. Each knew that the other would stick however great the pressure, would extend help before it was asked, if he could; and would tell the truth; seek no self glory, and everlastingly keep his word. Such men breed confidence and success'[14].

6.4 COURAGE

Courage is the most admired of human virtues in all societies—to be a man means to be courageous. The most important act of courage for a leader is to take decisions and to act. To take decision means being accountable for success or failure, but nothing happens or moves without a decision.

There are many other facets of courage which are important. Cowardice makes a man hide the truth; conversely, one who is courageous will not lie. It is an expression of courage to demand high standards of performance even at the cost of facing unpopularity. Again, it takes courage to say "no" to an act which is unethical. The total span of moral courage which enables a man to draw many others to him in any age is beautifully described in the following words :

> 'Quiet resolution:
> The hardihood to take risks:
> The will to take full responsibility for decisions;
> The readiness to share its rewards with subordinates.
> An equal readiness to take the blame when things go adversely
> The nerve to survive storm and disappointment and
> to face each new day with the score sheet wiped
> clean, neither dwelling on one's success nor
> accepting discouragement from one's failures"[15].

Again it is courage that gives distinctive direction to the entire approach to a leader's work. Peter Drucker, the doyen of Management teachers, advises that :

> "Courage rather than analysis dictates the truly important rules for identifying priorities. Pick the future as against the past; focus on opportunity rather than on problems; choose your own direction rather than climb the band-wagon, and

*in World War II in France.

aim high. Aim that will make a difference rather than something that is safe and easy to do."[16] Aiming high means raising ones vision to greater heights.

Finally, the most potent source of courage—both physical as well as moral—lies in the ancient Indian truth that the soul (atma) does not die—indeed it is eternal and indestructible. This truth forms the central message of the Gita. This knowledge makes a man not only fearless (nirbhaya) but indeed 'abhaya' (one who knows no fear).

6.5 WILL POWER

Will power to persist is another vital virtue invariably present in all outstanding leaders. In the implementation of any plan, programme or project, hundreds of difficulties arise and failures occur on the part of people who have to execute a plan. Sometimes these failures are due to natural causes; yet others, due to insufficiency of resources or frailties of human nature. A good leader must have the will power (determination) to persist in spite of set backs and obstacles that may arise in the implementation of his plan.

'Try, try again' is an age old advice based on the famous poem about Robert Bruce. The value of dogged perseverance was once articulated in a most dramatic manner by Winston Churchill who was the Prime Minister of the UK during World War II. He was invited by his school to preside over the function of its 150th anniversary. He was also requested to deliver the key-note address to the students, so as to inspire them to follow his example and become outstanding leaders in their career. Churchill accepted the invitation. There was a great expectation among all sections of society to listen to the views on leadership from one of the most outstanding leaders of the twentieth century.

On the appointed day the hall of the school was full. The media and scholars had turned up in full strength. After the usual welcome and other courtesies, Churchill was invited to deliver the key-note address. He got up from his chair, walked slowly to the podium, took out his small rectangular glasses, wore them and looked at the audience. There was pindrop silence. He then pulled out a small piece of paper from his pocket and placed it on the podium and spoke thus :

NEVER
NEVER
NEVER
NEVER
GIVE UP

Having spoken these five words, he ambled back to his seat. There was a total hush for a long while. However, this great message soon sank home, and he received a long standing ovation.

In just five words he had distilled the great secret of his leadership and success. In his chequered life he had seen many ups and downs but, he had never lost heart. When the time came, he was ready to lead his nation from almost defeat to total victory in the greatest war yet fought in human history.

Another example to illustrate the value of will power is its contribution to the success story of the fast-food chain of "MacDonald" of the USA, and now spreading elsewhere in the world. The company attributes its excellence to the determination of everyone in the organisation to serve fresh, fast and clean food to the customers with alacrity and despatch. To ensure that the needed determination does not lose vigour, the company has the following poster prominently displayed in the office of each and every manager of the enterprise :

DETERMINATION

NOTHING IN THE WORLD CAN TAKE THE PLACE OF PERSISTENCE.
TALENT WILL NOT : NOTHING IS MORE COMMON THAN UNSUCCESSFUL MEN WITH GREAT TALENT.
GENIUS WILL NOT : UNREWARDED GENIUS IS ALMOST A PROVERB.

Will power, no doubt, is the most important virtue for self-development which is the only way for a leader to grow and maximise his potential. We shall discuss in a later section, that anyone who is prepared to make determined effort over the necessary period of time can become the master of his destiny.

Will power to persevere is the key virtue for self-development. If it is strengthened and reinforced, then transforming our personality becomes an achievable goal. The experience of thousands of years of 'sadhana' and 'tapas' in India has been articulated in these words :

> 'For him who has struggled with external tendencies and conquered them, the internal tendencies become easily controllable'.

Consequently, self-denial of desires and physical needs have been harnessed in the following ways to develop will power :

- Fasting. 'Rozas' during the month of Ramzan is a well-established technique to purify the mind and strengthen will power. Most religions of the world prescribe fasting for the same purpose. Water fast of 40 days in the Indian spiritual tradition is perhaps the most rigorous practice in the world to transform human personality.
- Revolutionaries have used the technique of placing their hand on a burning flame for a long time without flinching, in order to develop tenacity of mind.
- Giving up sugar and salt for a fixed period serves the same purpose.
- Bath in ice-cold water in winter helps.
- Limiting sleep to say 6½ hrs per day instead of 8 hrs serves the same purpose, and also adds nearly 450 hours of extra-time per year for studies or other productive work.
- Giving up addiction to habits like smoking, drinking, chewing pan, inhaling snuff and so on, also strengthens the will power.
- Long distance endurance running every day, or thrice a week, not only strengthens will power but also adds to one's health.

While building our will power to persevere it is well to remember the well-known words of WH Longfellow :

> The heights by great men reached and kept
> were not attained by sudden flight.
> But they, while their companions slept,
> were toiling upwards in the night.

A few words of caution. Plain obstinacy should not be mistaken for strength of will. Obstinacy is frequently the product of vanity or ego or sheer ignorance. The line between the two is fairly thin. A leader who has the flexibility and initiative to change the method of implementing a plan without forsaking its purpose has the right touch. "There is always the danger that determination becomes plain obstinacy, flexibility mere vacillation. If you can hold in yourself the balance between these two—strength of will and flexibility of mind—you will be well on the road to being a leader in a big way.[17] When the source of will power is one's conscience it helps a leader to persist on the right course. However when the source is one's ego then it invariably ends up in obstinacy. Many a dictators of immense will power linked to their ego turned maglomaniac and brought great suffering to their people. Hitler and Stalin are two examples.

6.6 INITIATIVE

An effective leader is always two jumps ahead of events. He does so by intelligent anticipation based on sound information system to overcome difficulties and obstacles that crop up. He is also on the lookout for openings and opportunities to exploit for the furtherance of his task. All these abilities are the signs of initiative. In a nutshell, a man of initiative is a self-starter and that makes him dynamic.

On the contrary a man without initiative hangs around waiting for things to happen. 'No one told', 'no one ordered me', 'I did'nt know' and so on, are the utterances of executives who lack initiative. The one with initiative makes things happen.

Mutual confidence and trust accompanied by delegation of authority and responsibility are the conditions in which initiative blooms the most. **An important part of strategic management is to create structure** and organisational culture in which initiative of leaders at all levels can have a full play.

Initiative can be developed by the habit of forethought. A leader should take some quiet time to reflect on the chosen course of action to visualise the likely snags and difficulties that can arise. He would then be mentally prepared if some of the anticipated problems do crop up, and be able to modify or adopt an alternative course of action with dispatch and vigour.

6.7 KNOWLEDGE

Knowledge is a major component of the Universal Inner Structure of Effective Leaders and has three sub-divisions. The real secret of knowledge lies in what a leader learns through his own efforts. A leader's direct experience in the field of work cannot truly be replaced by any other device; yet, learning from other people's experience has been the very hallmark of all outstanding leaders. Learning is a lifelong and continuous endeavour. The reading habit is the biggest single factor contributing towards indirect experience. "The greater value of indirect experience lies in a greater variety and spread of knowledge. History is universal experience not of another, but of many others."[18] A survey in the USA shows that the most of the successful chief executives read an average of 19 books a year including 10 non-fiction works. The library is a very potent source to strengthen leadership.

Knowledge of the Job. Knowledge of the field of one's work gives a leader strength. 'Knowledge is power' is a well proven maxim and it is, indeed, true that "a group of people can often be dominated by one person who sees most clearly".[19] The knowledge of the total system and the internal and external environments of the organisation is also necessary for being able to get things done.

'A leader develops best if the field of his work is in keeping with his aptitude. Assuming that the field is chosen well, a leader should widen his knowledge and technical competence in his job. This would naturally help him acquire flexibility in responding to changes and to handle people with the necessary confidence.

Expertise in the job should be supplemented by knowledge and mastery of a few skills which help a man to function as a leader—decision-making, communication, time management and understanding human nature, are some of the more important areas.

Learning from the knowledge and experience of others should be cultivated by a leader early in his life. 'Wisdom begins at a point of understanding that there is nothing shameful about ignorance'[20]. An inquisitive and open mind and acceptance of informed criticism are essential for enrichment and growth of knowledge.

The ultimate goal of knowledge in the chosen field of work of a leader is to develop intuition—at times also referred to as the sixth sense. It is somewhat similar to the clinical sense of a competent medical practitioner. Intuition has been defined as "the power of the mind by which is immediately perceives the truth of things without reasoning or analysis". It is the distilled experience and years of dedicated application to learning every aspect of one's profession or field of work. Acquiring knowledge with common sense is the royal road to intuition. Common sense is the ability to sweep aside trivial matters and get right to the core of what really matters.

Knowledge of Handling People. How a leader handles people to get the best out of them is the essence of leadership. This aspect is discussed in some detail at the end of the section on "knowledge".

Knowledge of Self. A good leader must understand his own personality. This is absolutely vital. Leadership is the interaction between the leader and the led. An effective leader must know and understand both the parties.

The human tragedy is such that each one of us feels that he is the epitome of perfection, and refuses to look at himself objectively as in a mirror. There is a sound and noble core in every person. However, unfortunately, it is coated with layers of ego, desires, greed, envy and anger of varying thickness. Deeply involved in these layers we refuse even to realise that we may have some shortcomings. We tend to blame others for being 'let down', 'deceived' and so on. A good leader who understands his own personality is never afflicted with such self-created problems.

Quiet introspection to honestly and objectively examine the real motives underlying our actions is the best and surest way to understand ourselves. 'Have I been truthful, just, honest, selfless, courageous, tenacious ?'—is one way of looking at ourselves. "Has my action resulted from greed, jealousy, anger, selfishness, envy ?' is another way. Some practice to look at ourselves in **deep silence** helps our conscience to tell us very clearly when we are being less than ethical and moral—when we are wanting in any of the virtues which a good leader should possess. And, knowing one's weaknesses and, of course, strengths, is the first step in the effort to fully develop our potential as leaders.

Self knowledge is also a step towards understanding others which is essential for harmonious interpersonal relationship. Without it in a group, a good deal of covert behaviours, to delay, oppose and even sabotage a task can slowly develop. A very useful test to know our attitude towards others has been devised by William Schutz. Fundamental Inter Personal Relation Orientation of Behaviour (FIROB) test help us to understand the underlying reality of our personality when it comes to establishing working relationship with others. A leader would do well to take this test in order to understand his personality in this field as it is a very useful bit of knowledge in handling people.

6.8 HANDLING PEOPLE

When it comes to handling people the total personality of a leader comes into play. The Stanford Research Institute has quantified the importance of understanding people and handling them appropriately to be 88 per cent of effective management strategy. Managerial effectiveness is the management terminology for leadership. It is well to remember that this truth is applicable at all the levels of management—Junior, Middle and Senior. The 'Katz Model' [21] at Figure 6.3 shows the relevant value of management skills at various levels. Although there have been some minor changes in the original design, it clearly shows that Human Relation Skill is consistently the biggest component at all the levels of management.

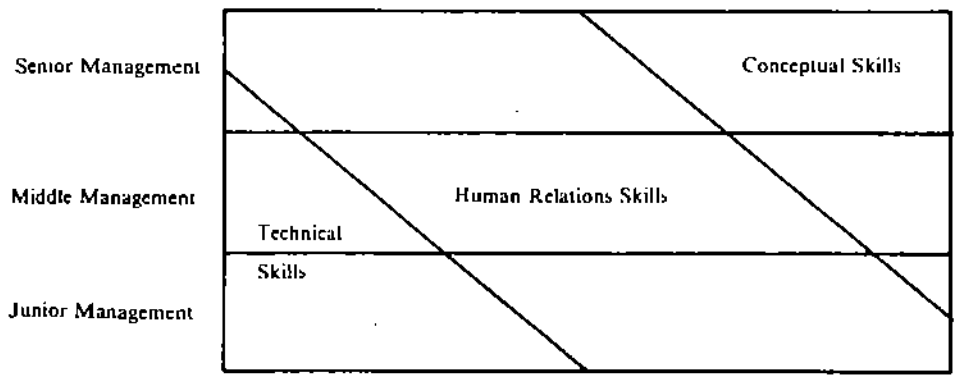

Figure 6.3 : Katz Model—Skills of an Effective Manager

A leader in any organisation has to handle people in the following three different directions :

a) The first—is downwards—his own team which he has to build as an effective and cohesive group motivated to achieve the goals of the organisation.

b) The second—is lateral, which involves winning the support and cooperation of colleagues over whom the leader has no control, but who have an important functional relationship with the group/organisation headed by the leader.

c) The third—is a purposeful, constructive and harmonious relation with the higher authority under whom a leader functions—the boss.

Human nature. In order to handle people effectively it is useful for a leader to understand human nature. There are a large number of theories about it. For developing leadership potential it is useful to focus our attention on two concepts which have a lasting and practical value for leaders.

Recent research suggests that "You and I motivate ourselves to a large extent by responding to inner needs".[22] In this context Maslow's concept of hierarchy of needs is useful. He suggests that individual needs are arranged as in Figure 6.4—the strong one at the bottom and weaker but more motivating ones at the top. In his later years Maslow also focused on spiritual needs which have been the basis of the Indian culture, ethos and civilisation for five thousand years; these needs motivate a man to act, of great dedication, self-sacrifice and service to lofty causes.

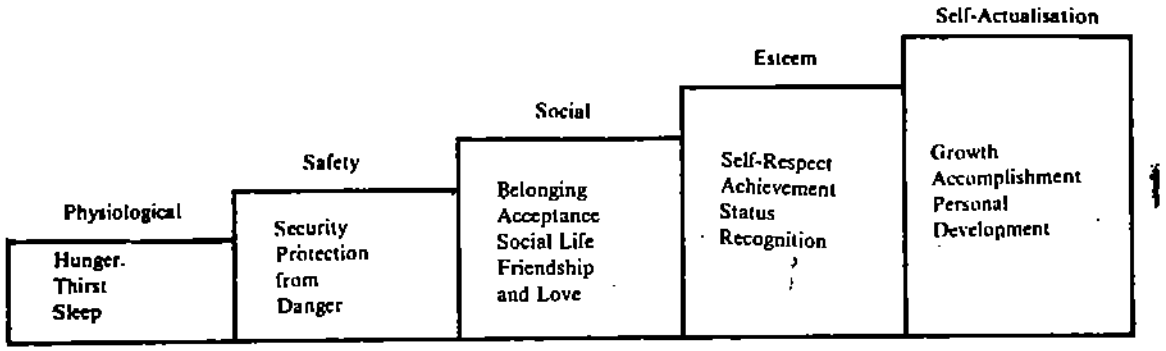

Figure 6.4 : Maslow's Need Hierarchy

The second concept is the Indian experience that the nature of every individual is a mixture of the following three gunas (characteristics):

- Tamas—dull, lazy and inert quality;
- Rajas—the active, passionate aspect of nature;
- Satwic—pure and ethical aspect of nature aiming at harmony and balance.

The desire for benefits and fruits of action is a sign of Rajas; the giving up of action since you cannot get any benefits is Tamas. To engage oneself in action, knowing that results will follow, and yet not be attached to it or get concerned by it is Satwa. The Indian civilisation and culture has survived because of the high value attached to Satwic leadership in our society. Satwic leaders have always exercised great influence on Indian minds and actions—the latest example being Mahatma Gandhi.

'Mahamantra' for handling people. There is a simple sentence to guide leaders in handling people. But in its significance it is so potent that it has acquired the status of a 'mahamantra' (the ultimate formula). It is:

> "a good leader knows his people better than their mothers do and cares even more".

No one knows the nature of a group of people better than a mother knows her children. She has a full intuitive feel of their needs. She knows their weaknesses and their strengths. Her main concern, and very often the only concern, is to bring them up in a manner that they are an asset to the family, the community, the country and the world. Clearer and higher the vision of a mother, the loftier is her effort to groom her children to excellence. With the intimate knowledge of their total personality she knows as to who will do the right thing merely by watching her example: who will need a pat on the back or perhaps a quiet chat; and, which one, now and then, may well need the rod. The most pronounced factor which makes the children amenable to the guiding hand of the mother is the fact that she cares and that they implicitly trust her.

The same has to be the approach of an effective leader towards his people. Once the people are convinced that he is a person who knows them well and he truly cares for

them then they would do anything for the leader. However, it requires a very major effort to know people and know them better than even their own mothers—effort in terms of time, attention and genuine interest in people. (A self-assessment exercise about knowing people is at Appendix 'A'. The purpose of the exercise is to bring home to you the need for devoting time and effort to know people.)

The difference between 'indulgence' and 'caring' should be clearly understood. Indulgence means excessive gratification—giving material things—money, conveniences and so on. Idulgence, by and large, spoils the recipients. Caring, on the other hand, is a matter of attitude—it is a quality based on unselfish love. Consequently, caring is a matter of heart and not related to material resources. A skill that often helps a leader to know and care for his people is the skill of communication.

Communication : To know people. The ability to know people is the starting point to handle them and communication skill plays an important role in this ability. There are detailed courses on communications in the syllabi of MBA and other programmes. These help a leader TO TELL what he wants done. However, some essential features of this skill relevant to knowing and handling people need discussion.

Most of the strained and fractured relations can be traced to the mutual breakdown of communications between individuals in a family, group, community, countries and even among the community of nations. One starts seeing only the uglier side of others and it leads to alienation. The ability to communicate, on the other hand, puts human relations on an even keel by removing misperceptions and misunderstandings. The ability has two sides:

- The skill of expression; and
- The skill of listening.

The skill of expression does not merely mean gift of the gab or cleverness with words. For a leader the skill of expression is a vehicle to generate trust. Verbal expression counts for only 30 per cent in this skill, the balance 70 per cent is the body language—expression in the eyes, conviction in the tone, the sincerity in the posture, and generally, the vibrations that a person conveys. Body language communicates the total personality of a leader, and its effectiveness depends, entirely on the strength and balance of the "Universal Inner Structure of Effective Leaders". In genuine expression there can be no pretension. Spontaneity, straightforwardness and sincerity are far more effective than sheer command over the language.

The skill of listening means understanding and knowing the other person. It has been found that this part of communication skill is even more important, but, unfortunately less prevalent. "Watch your listen/talk ratio—learn to be a good listener"[23] is a sound advice. Listen with ears and observe body language with eyes. Even nature has a design in the listen talk ratio. It gives two ears to a person, but only one mouth.

Listening has three ingredients. The first, of course, is the physical process of hearing what the other person is saying; this involves attention. Comprehending what the person is saying is the second ingredient, and demands undivided attention. Looking out of the window, or attending to routine papers while listening are signs of inattentiveness. Remembering what you listen is the third ingredient of this skill and, naturally, comes about only if a leader hears and comprehends what is said. The ability to listen attentively and with sympathy in which a leader shows signs of warmth, makes the other person feel that he is an individual and not merely an 'it' a faceless part of the machine. It helps generate trust in the team. Above all, 'listening to the body language with eyes' gives a leader an opportunity to really know his people and their characteristics.

Remembering names is an important part of communication skill. There is no sweeter music to the ears of a person than his or her own name specially when he is being addressed by the boss.

Experience shows that effective communication means:
50 per cent listening;
25 per cent speaking;
15 per cent reading;
10 per cent writing.

6.9 LEADERSHIP STYLES

The statement that a 'good leader varies his style between authoritarian to participative (autocratic to democratic, if you like) depending on the task, the changing situation he encounters and the changing group that he has to lead' sums up, rather pithily, the w' y an effective leader has to function. However, no effective leader ever consciously adopts a style—it comes, and indeed it must come, naturally from within. Style invariably is the reflection of the substance. It is the expression of the man and the strength and balance of his "Universal Inner Structure of Effective Leaders". Rusi Modi while discussing leadership repeatedly emphasises "above all be yourself".[24]

Conceptually the changes in style which spread between the two extremes is well depicted in the model evolved by R. Tannenbaum and W. Smidt shown at Figure 6.5. It should be seen only as an illustration depicting the range of options available.

In practical terms any change in style is merely an intuitive variation in the mix of personal example, persuasion and compulsion.

Personal example is the most potent factor in the technique to inspire people to do what they are expected to do. If a leader can work 12 to 14 hours a day then the message gets across. Personal example in punctuality, integrity, honesty, frugality, courage, persistence, initiative unselfish love of people, or whatever is infectious with the Indian people. They try and live up to the standards of a leader. TO DO yourself what you expect your people to do is the secret of leading people.

There are people and there are times when persuasion is necessary to motivate people to do what has to be done. When they understand the circumstances, people do rise to the occasion and go through the most irksome tasks. The long-term persuasion lies in the organisational culture (esprit de corps) in which people take pride in doing anything to uphold the honour and good name of the organisation.

Compulsion by the way of punishing the few indolent, lazy or resentful individuals who do not perform their share of work is also necessary to maintain discipline. Also, to let people know unambiguously that the leader is fair and just, but not tolerant of the incompetent, the crooked and mischievous. There is an innate tendency among Indians to kill or retard an organisation with kindness. Inability to take appropriate action is rationalised by arguments like pressures from the top, fear of litigation, trade union agitation and so on. To a degree it is also due to a lack of moral courage.

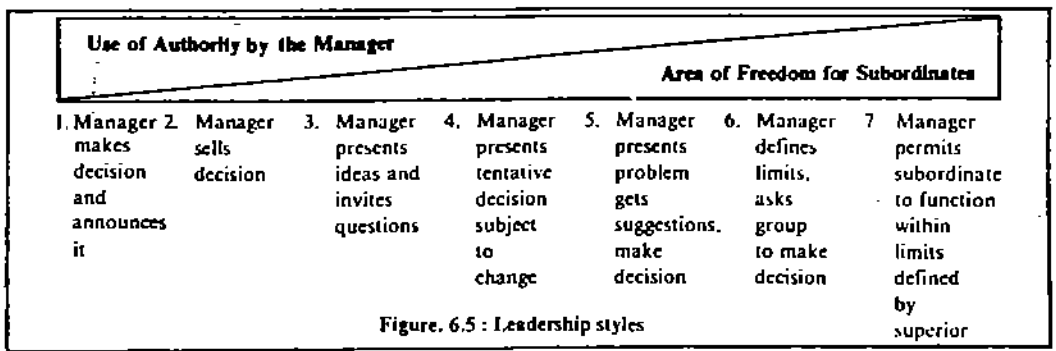

Figure. 6.5 : Leadership styles

Activity 1

Ponder over the leadership style of your immediate supervisor in the organisation you are working and answer the following:

a) How do you describe his leadership style?

.....

.....

.....

.....

b) Is his leadership style consistent (or does it vary frequently)?

.....

.....

.....

.....

c) Are his actions/deals consistent with what he says or professes?

.....

.....

.....

.....

d) Give your views/comments on 'why' and 'how' of his style, including whether you are satisfied with his style.

.....

.....

.....

.....

6.10 LEADERSHIP IN INDIAN CONTEXT

More and more organisations in the country are reflecting the diversity of Indian people. Executives and workers in organisations often hail from different parts of the country, speak different languages, have different customs and traditions, profess different religions and have different ethnic origin. For a leader to be able to handle such groups of people, he must be able to rise above his own narrow regional, religious, linguistic and ethnic origin, and project, by convictions and actions, a true All-India personality to be able to command, respect and loyalty of his team. There are two essential requirements for succeeding in this goal.

First, a leader should have a good grasp and pride in the long history and cultural ethos of India. There are excellent books like "Discovery of India" by Jawaharlal Nehru, "History of India", by Vient Smith, "Wonder that was Hind" by A.L. Bhasham and "Outline of History" by H.G. Wells to provide this grasp. These books should be studied in depth.

Second, a leader should have rudimentary knowledge of all religions of India and he should genuinely respect all faiths. The best guidance for such an attitude was inscribed on rocks in India more than two thousand years ago by Emperor Ashoka in these words:

> "All sects deserve reverence for one reason or another. By thus acting, man exalts his own sect, at the same time does service to the sects of other people."

Activity 2

(Re: Universal Structure of Effective Leaders) In England a survey was undertaken among a cross section of successful Chief Executives to determine the attributes which helped them to rise to the top. The 25 attributes, given in Table 6.1, emerged as the most important. You may arrange these attributes in the order of merit which you consider appropriate for reaching the top. Also, against each attribute write that component of the "Universal Inner Structure of Effective Leaders" which you think is the source of each attribute. After you have done the exercise compare your answer with the one given in Appendix 'B'.

Table 6.1: Attributes of Successful Leaders

Ambition	:	Ability to administer efficiently
Willingness to work hard	:	Enthusiasm
Enterprise	:	Capacity to speak lucidly
Astuteness	:	Singlemindedness
Ability to 'stick to it'	:	Willing to take risks
Capacity for lucid writing	:	Leadership
Imagination	:	Ability to take decisions
Ability to spot opportunities	:	Analytical ability
Willingness to work long hours	:	Ability to meet unpleasant
Curiosity	:	situations
Understanding of others	:	Openmindedness
Skill with numbers	:	Ability to adopt quickly to
Capacity for abstract thought	:	change.
Integrity		

6.11 SUMMARY

In order to develop effective strategic managers, it is helpful to understand the 'Universal Inner Structure of Effective Leaders'. The understanding can be used by the leader to improve his own potential, encourage and groom others in his organisation to become effective leaders.

The universal inner structure of effective leaders consists of several virtues or qualities and these include selflessness, character, courage, will power, initiative, knowledge and capacity to handle people appropriately. A good leader knows his people very well. Communication skill plays an important role in this respect. A major part of communication is listening.

Whether a leader should change his style in accordance with the demands of the situation is rather controversial. It is considered better for a leader "to be himself". For an Indian leader, if he wants to be effective, it would be necessary for him to have a good grasp of Indian history, religions, culture and ethos.

6.12 KEY WORDS

Universal Inner Structure of Effective Leaders : means an inner hard core of leaders which is composed of certain universal virtues, qualities or attributes.

Selflessness : means doing one's duty/work without the expectation of reward or return. It implies a spirit of sacrifice. Its two important components are knowledge and character.

'Tamas': is that characteristic of human nature which indicates inaction, laziness and situation of hopelessness.

'Rajas' : is that characteristic of human nature which is concerned with the desire for benefits and fruits of action. It is this active and passionate aspect of nature.

'Satwik' : is that characteristic of human nature which is concerned with doing one's action but without the feeling of attachment with results. It thus indicates pure and ethical aspect of nature aiming at harmony and balance.

6.13 SELF-ASSESSMENT QUESTIONS

1) What is meant by 'universal inner structure of effective leaders'? If you believe in this approach, does it mean that you believe in 'trait theory' of leadership? Discuss.

2) What are the components of universal inner structure of effective leaders? Which ones you think are the most important and why?

3) Suggest some ways and means by which the following virtues can be improved or created.
   a) Selflessness b) Character c) Will power d) Initiative e) Courage

4) Are selflessness and lack of ambition the same? Discuss.

5) "Knowledge is a major component of the universal inner structure of effective leaders". What different types of knowledge a leader is expected to possess? How can knowledge be improved?

6) Why appropriate handling of people is regarded as the most important quality in an effective leader? What a leader ought to do to handle people appropriately?

7) What is the 'mahamantra' for handling people? Explain briefly.

8) Should a leader change his style or stay with a style which is in consonance with his basic personality? Discuss.

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23) Mark H. McCormack in "What they don't Teach you at Harvard Business School", p. 22, Fontana-Cullina, 1985.

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Appendix—A : Handling of People—Sample Self Exercise

Fill the following table in respect of any individual working for you. If you know the answer then write it as shown in Sr.1. Otherwise put an ×.

Name of Selected Individual

.....

Sr. No.	Particulars		Answer Put a × if don't know
1)	Grandfather's Name		Ram Singh
2)	Full Name		
3)	Caste		
4)	Village/Native Place		
5)	Educational qualification with Division/Merit and above		
6)	School where studied		
7)	College where studied		
8)	Name of Father		
9)	Profession of Father		
10)	Where is father living or is he dead		
11)	No. of brothers and sisters he has		
12)	Profession of his father-in-law		
13)	Education of wife		
14)	Names of his children	(a)	
		(b)	
		(c)	
		(d)	
15)	Where are the children studying?	(a)	
		(b)	
		(c)	
		(d)	
16)	His aspiration for his children		
17)	His aspiration for himself		
18)	What games is he good at?		
19)	What hobbies he has?		
20)	How many times you have talked to him about his personal life?		
21)	Have you visited his home?		
			Total Score

Sr. No. 1 is an example and will not count towards the score.

Score one mark for knowing the detail about the individual in each sr. If your score is above 16 you have the potential to develop the skill to handle people. Otherwise you need to devote more time to it. :

Appendix—B : Ranking of Attributes by Successful Chief Executives

Rating	Attributes	Source in the Universal Inner Structure of Leaders
1)	Ability to take Decisions	Courage
2)	Leadership	Universal Structure
3)	Integrity	Selflessness
4)	Enthusiasm	Knowing the Job and Vision
5)	Imagination	Ideal/Vision and Knowing the Job
6)	Willingness to Work Hard	Perseverance
7)	Analytical Ability	Knowing the Job
8)	Understanding of Others	Handling of People
9)	Ability to Spot Opportunities	Initiative
10)	Ability to Meet Unpleasant Situations	Courage
11)	Ability to Adopt Quickly to Change	Initiative and Knowing the Job
12	Willingness to Take Risks	Courage
13)	Enterprise	Initiative
14)	Capacity to Speak Lucidly	Communication Skill in Handling of People
15)	Astuteness	Knowing the Job
16)	Ability to Administer Efficiently	Knowing the Job and Handling of People
17)	Open-mindedness	Selflessness
18)	Ability to "Stick to It"	Perseverance
19)	Willingness to Work Long Hours	Perseverance,
20)	Ambition	Ideal or a Vision
21)	Single-mindedness	Perseverance
22)	Capacity for Lucid Writing	Communication and Handling the People
23)	Curiosity	Knowing the Job and Initiative
24)	Skill with Numbers	Knowing the Job
25)	Capacity for Abstract Thought	Selflessness based on Vision

UNIT 7 STRENGTHENING THE UNIVERSAL INNER STRUCTURE

Objectives

The objectives of this unit are to discuss :

- whether leaders are born or made
- the techniques by which the potential for leadership can be improved.

Structure

7.1 INTRODUCTION : ARE LEADERS BORN OR MADE ?

In Units 5 and 6 we discussed what, in practical and functional terms, is leadership and what are its essential components.

It was explained that knowledge was a major component which can certainly be improved upon by training in various functional areas to sharpen the skills of a leader. However, knowledge, though a very important part, makes up for only about 12% of the whole potential of a leader. Character is by far the biggest component of leadership : It is here that the real difficulty to improve leadership arises. Unfortunately, it is not possible to teach selflessness, courage, will power, initiative or other virtues merely through a classroom.

It is because of this dilemma that there is a perpetual debate whether leaders are born or made. The best answer to this question is by discussing a similar problem "are olympic athletes born or made"? The answer is that no one can be an olympian without having some basic athletic aptitude, and then developing that aptitude by intense and dedicated training. And, even in the training, dedication, commitment and determination will determine the level of excellence that he can attain. Same is the case with leadership. Through training of young people with aptitude, a large number of good athletes can be produced even though olympians may be few. Similarly training can produce effective leaders even though outstanding ones may be rare. In both cases the level of excellence depends on the effort an individual for developing himself.

7.2 HOW TO IMPROVE LEADERSHIP POTENTIAL?

Since leadership is exercised by the mind (reflected in character and personality), it is the mind that has to be trained to develop qualities which add up to the total leadership potential. Since research in the West about leadership got fragmented, there is not much help that we can get from that source. However, there is iteration by one well-known psychologist of a time-tested technique of drawing inspiration to improve and develop by reading the lives of outstanding leaders. A psychologist says :

> "The would-be leaders should study what is known about leadership and read books on leadership. He should examine himself in respect of attributes of leadership which he learns about, try to adjust himself, first in behaviour and

presently, to the ideal attitude. There is no doubt that wisdom backed up by a desire to learn, can effect great changes in ability to lead other men."

So the first technique for developing leadership is to read widely with special emphasis on biographies of outstanding leaders. Rusi Modi of TISCO is a firm believer in the concept that leaders are born. However, when his views on leadership were being recorded on 'video tape' in the MDI series—on the outstanding enterprise leaders in India—he was asked for his advice on any step that would help an executive to develop his leadership potential to the maximum. He paused and reflected, and then suddenly recalled his childhood. As a boy he used to read the lives of leaders like Napoleon and Bismark. He mentioned how his father, at times, scolded him for behaving like a Napoleon. The lives of these great men certainly inspired him. Rusi's experience is very similar to that of a large number of leaders who have subconsciously been influenced by the lives of great men.

It is necessary for leaders to keep on reading the lives of outstanding men, particularly in the field of their work. The lives of Ashoka, Akbar, Shivaji, Vivekananda, Tilak, Gandhi, Napoleon, Bismark, Garibaldi, Abraham Lincoln, Einstein, Gladstone, Churchill have inspired generations of leaders round the world. Military history is particularly rich in recording the lives of the great captains of war.

In India, we fortunately have a great heritage and experience of reprogramming the human personality. The concept of "sadhna" (used in spiritual field meaning 'endeavour to get particular results') has been used for thousands of years to improve human beings by imbibing ethical and moral values and purging weaknesses and vices. There is a lucid explanation by Dr. Sivananda who was a very successful medical practitioner before he switched over to spirituality. He has interpreted our spiritual heritage in the modern scientific language and has this to say about how an individual can transform himself :

> "You have got a particular way of writing in vertical way. This is prarabhda (inherited situation, condition or tendency). You can change that writing into slanting way. This is Purshartha (effort). Take care of your thoughts. Then actions will take care of themselves. Action follows thought. *You sow an action and reap a tendency. You sow a tendency and reap a habit. You sow a habit and reap a character. You sow your character and reap your destiny. Therefore, destiny is your own creation. If you change your habits you can become master of your destiny."*[2]

The essence of this ancient message is that it is possible to improve one's character if one is prepared to make an effort. Interestingly, the doyen of management teachers, Peter Drucker has exactly the same conclusion as Dr. Sivananda. He says that "Self-development of the effective executive is central to development of the organisation, whether it be a business, a government agency, a research laboratory, a hospital, or a military service. As executives work towards becoming effective they raise the performance level of the whole organisation. They raise the sights of people—their own as well as others."[3] This process means "he has to learn a good many new work habits as he proceeds along his career, and he will occasionally have to unlearn some old work habits."[4] Self-development really means developing "leadership—not the leadership of brilliance and genius, to be sure, but the much more modest yet enduring leadership of dedication, determination and serious purpose."[5]

Unfortunately, leadership, particularly its major component—TO BE which is the source of **Effectiveness,** cannot be taught. It is an art which can be acquired only by self-effort. Leadership is a function of interpersonal relations and not of organisational status. The question that arises is how an individual who wishes to develop his leadership should go about to train himself?

Drucker categorically asserts that effectiveness can be learnt and suggests—"Effectiveness, in other words is a habit—that is a complex of practices. And practices can always be learned. Practices one learns by practising and practising and practising again."[6]

In the seminal work—"The 7 Habits of Highly Effective People", the author Stephen Covey concentrates on the changing of habits by anyone who wishes to become an effective leader. The theme of the book[7] is an extract from Dr. Sivananda's paragraph quoted above (the portion in italics). It is quite obvious that the Indian experience of transforming human personality is being adopted worldwide. India's contribution in this field is well in keeping with the ancient Indian prayer "Loka samastha sukhinau

bhawantu"—may the entire mankind enjoy peace and comfort. It is this ideal that has helped our civilisation to survive for 6000 years.

It is a universal experience that resistance to change the habits of thought, word and deed which develop over a long period of time is very very strong. It is like the tremendous gravity-pull experienced by space vehicles which have to breakout of the earth's gravity to go into the space. In doing so more energy is "spent in the first few minutes of lift off, and the first few miles of travel"[8] than is required during the rest of the journey for days on end and millions of miles to reach the moon and other planets. Same is the case when we want to break away from the deeply embedded habits like selfishness, procrastination, lack of perseverance, dishonesty etc. which are serious impediments to effective leadership. To succeed in breaking away "involves more than a little will power and a few minor changes in our lives. 'Lift off' takes tremendous effort but once we break out of the gravity pull our freedom takes on a whole new dimension"[9]. It is because of this great difficulty that thinkers like Patanjli of India have advised that transformation needs determined effort "over a long time" so that we can alter the very course of our lives and become masters of our destiny.

In order to change our habits it is important that :

- We understand why do we want to change our habits and what new habits we should acquire. This knowledge comes from the awareness of our strengths and weaknesses in relation to the 'Universal Inner Structure of Effective Leaders'.
- We have the desire to change. This desire grows out of an ideal or a vision we have in life and the need to become more effective to fulfil our ideal or vision. Desire to change also grows from an awareness that success in self-development and improving our character leads to happiness in life (this is further discussed in unit 7.4).
- We know how to set about changing our habits. We have already discussed the time tested technique of reading the lives of outstanding leaders of the world and, presently, we shall discuss the instrument called the 'self-development diary'.

In a nutshell, success in changing habits depends on interaction and balance of the above three factors which are diagrammatically illustrated below.[10]

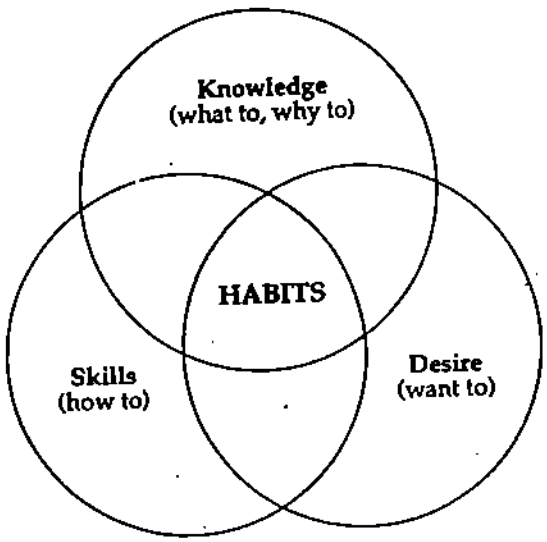

Figure 7.1: Effective Habits

It is comparatively easy to practice music, sports athletics etc. as the improvement can be displayed and progress monitored. But, how do you practice the intangibles—the virtues of character? It is here that the concept and experience of 'sadhana' designed essentially to transform human mind and personality is a help. Dr. Sivananda developed the technique of maintaining a spiritual diary by his disciples. His finding was that anyone who followed the discipline of maintaining the diary with honesty and determination met with 'unfailing success'. The technique involves introspection—every evening to record the effort made during the day in the areas chosen for improvement or reform. This diary was adopted as the self-development diary and has been in use for about a decade. The first step to self-development is self-knowledge to determine the weaknesses which one wants to eradicate and virtues which one wants to imbibe.

7.3 SELF-KNOWLEDGE

Knowing ourselves is the first step on the path of self-development. However most of us, unfortunately do not have the objectivity to look at ourselves with clinical detachment. This inability puts us on a "self-deceiving, self-justifying path often involving rationalisation (rational lies) to self and others".[11] In the bargain we injure ourselves deeply and struggle through our lives blaming others for being 'deceived', 'let down', 'done down', 'ignored' and so on. To help us overcome this inability to know ourselves, a large number of instruments have been developed which assist us to know our virtues and weaknesses. The following three instruments are offered to assist those who wish to understand their own personalities :

- Appx. A[12]—It is a check-list to help us to determine whether we have the rudimentary aptitude for leadership. The value of the check-list depends on the honesty and detachment with which we judge ourselves. It has three parts. Part I deals with the five key characteristics which are required in one's field of work. Part II is a self-appraisal whether one is an introvert or extrovert. Part III deals with other qualities which indicate our basic potential for leadership. Higher the proportion of "Yes" the higher the potential.
- Appx. B[13]—It is a check-list to see whether we have the capacity to keep pace with changes in the field of our work which are bound to take place due to social, economic and technical changes that are so noticeable in India.
- Appx. C[14]—It is an exercise in two parts. Part I gives us an opportunity to judge ourselves and to contrast our self-image with the way we would prefer to be. It also provides us a chance to obtain the judgement of another person whom we trust and feel that he would give us an honest and objective feed-back. Part II gives us an opportunity to determine where we stand between being effective and ineffective as leaders. Detailed instructions are given how to fill the exercise questions. The usefulness of the exercise depends on the honesty and detachment with which we judge ourselves. When we request a friend to give us a feed-back then we have to be careful on one count. Our friend should grade us without seeing our self-appraisal and we should grade ourselves without seeing the appraisal our friend makes about us. Then only it will be possible to get an objective picture.

While doing self-assessment exercises some of the common words used in relation to human and moral values, at times, are not quite clear to many of us. It is therefore appropriate to explain some of the more common words used in this context :

- Purity — When our thoughts, words and deeds are not motivated by lust, anger, greed, attachment, egotism or jealousy then these are pure.
- Integrity — uprightness, soundness, honesty.
- Honesty — being fair and righteous in speech and act; not lying, cheating or stealing.
- Loyalty — True, faithful to duty, love or obligation; faithful in allegiance to the government or country.
- Holistic — (from holism) the tendency in nature to form wholes that are more than the sum of the parts by ordered grouping.

While the self-awareness instruments are useful, none can replace the real, hard and honest look in the deepest recesses of our heart. This X-ray examination can be carried out only by ourselves. Fortunately man has the rare capability of discrimination and if we sit down quietly and examine ourselves then our strengths and weaknesses can very easily be assessed. The best way is to examine our motives behind what we think, say and do as a habit. One way is to ask questions related to the Universal Inner Structure of Effective Leaders. For example :

a) Are my thoughts, words and actions always pure or am I influenced by lust, anger, greed, attachment, egotism or jealousy?

b) Can I be considered to be a man of integrity?

c) Am I honest? Or do I lie, cheat or steal?

d) Am I loyal? Or my loyalty changes to suit my self-interest?

e) Do I have faith in God or do I think of Him only when in trouble?

f) Is my motive in saying and doing things, my self-interest or do I have an ideal higher than "I", "me" and "myself".

g) Do I have the courage to take decisions knowing that decision can turn out to be wrong? Or do I procrastinate or try to involve my superior in taking decisions.

h) Do I have patience and persistence to apply myself to a task till it is successfully completed? Or do I give up when faced with difficulties or out of sheer laziness.

j) Do I take initiatives or like to drift along?

k) Do I have the knowledge, skill and capability to achieve excellence in my work? Have I updated my knowledge?

l) Can I handle people and get positive response from them to accomplish whatever has to be done?

m) Do I know my strengths and weaknesses? Or do I believe that I am perfect but people are jealous of me and do not cooperate with me.

There is a very practical advice contained in the simple words 'watch yourself' to understand yourself. It means that we should watch our motives in the five words that lie hidden in the five letters of the word WATCH[15] :

W—Word

A—Action

T—Thought

C—Conduct

H—Heart

7.4 SELF-DEVELOPMENT DIARY

The layout of the self-development diary evolved in 1979 is presented in Table 7.1. It is only a model to be modified to suit the needs of each individual. The areas of the 'Universal Inner Structure of Effective Leader' which need reinforcement will differ from person to person. So also the weaknesses that have to be eradicated will be different. Consequently, the check-list in the diary for each person will have to be structured as per his needs :

Table 7.1 : A Model of Leadership self-development Diary

Month ——————

Sr. No.		1 2 3 4....31 REMARKS
1)	Time devoted to physical fitness	
2)	Time devoted to professional study/ acquiring professional skills.	
3)	Time devoted to study men under me and man-management.	
4)	Number of subordinates I have helped in their personal and professional development.	
5)	When I had the choice, how many times did I place the good of the organisation/ country above my self-interest.	
6)	Number of times I had the courage to correct my subordinates' mistakes/indiscipline.	
7)	On how many occasions did I set a personal example to my subordinates.	
8)	Time wasted in fantasies of family, fortune and fame in the future or fretting about the past.	
9)	How many times I have been greatly angry, jealous, envious or hateful.	
10)	Number of acts of self-denial to build up my will power.	

Out of the experience of the last 10 years one modification has emerged. Some individuals like to focus their attention on imbibing one virtue and/or eradicating one weakness at a time. This practice is essentially based on the experience of Benjamin Franklin, one of the well-known founding fathers of the USA who had used the diary as an aid to transform himself.

The secret of success lies in setting simple goals in the beginning and achieving success in these. By doing so "we build the strength of character, the being, that makes possible every other positive thing in our lives"[16]. It is important that we have conviction and faith in this process; then only we can undertake such a challenging endeavour. If we have doubts even now then the words of Samuel Johnson should convince us of the great truth in this approach to effectiveness, quality of life and happiness :

> "The foundation of content must spring up in the mind, and he who hath so little knowledge of human nature as to seek happiness by changing anything but his own disposition, will waste his life in fruitless efforts and multiply the grief he proposes to remove"[17].

Experience shows that the time required to transform the character of a person depends on age, but much more on the sincerity of effort. Dr. Art Ong Jumsai Na Ayudhya of Thailand who is doing yeoman work in the field of introducing human values in the educational system of Thailand feels that if the intensity of effort is taken as uniform then total transformation can take place in two and half months in a boy who is 10 years old, in five months in a young man of 20 years, and a few years in men above fifty.[18] Experience with self-development diary used by Army Officers suggests that those who stayed in the course with sincerity for a period of three months experienced palpable change in themselves to a sufficient degree to continue their endeavour.

During experiments in the Army, purely on a voluntary basis, it transpired that a very large number of officers were enthused to undertake self-development by adopting the structured technique of maintaining a self-development diary. However, those who persisted for a period of three months or more were seldom more than twenty per cent of those who started; the rest dropped out. On the face of it, it was disappointing that such a large proportion of officers did not have the will power to persist. However, it was perfectly in keeping with group behaviour.

Any group can be divided into three parts: one-third who are positive towards their organisation; one-third who are neutral and one-third who are negative. If the one-third positive group is strong enough to carry the neutral group with them, then that organisation does well and becomes effective. Organisations in which one-third negative group carries the neutral group with them, are beset with morale and effectiveness problems. Consequently, the 15 to 20 per cent officers who benefited from self-development endeavours were reinforcing the positive group in their units and formations. This was confirmed by formation commanders who were involved in these trials and experiments.

A beneficial side-effect of the experiment was that those officers who persisted in practising self-development techniques beyond three months, not only became more effective as leaders, but became happier as individuals. The cause of this happy side effect lay in the following equation of happiness which compresses the entire wisdom of the East :

$$\text{Happiness} = \frac{\text{Number of Desires Fulfilled}}{\text{Number of Desires Entertained}}$$

The crux of the matter is that anyone who has the will power to control his desires can have a very high quotient of happiness; officers who developed persistence to stay the course were also exercising control over their desires.

Activity 1

In this unit some techniques for improving the potential for effective leadership were discussed. Read some further literature (e.g., further readings) on the subject and suggest some more techniques. You can discuss with your counsellor/ fellow-students/ colleagues.

.....

.....

.....

Activity 2

Are you maintaining a self-development diary? In case you are not, then start maintaining one. Watch for the results and note your findings after one, six, and twelve months.

After one month .....

After six months .....

After twelve months .....

7.5 HOW TO SUSTAIN MOTIVATION FOR SELF-DEVELOPMENT TO BE A LEADER

If I want to be the master of my destiny by transforming my character then I must invest substantially in the main instrument that will give me this mastery—myself. The main investment that is needed for transformation has also been tested over and over again in human history, in all the societies and civilisations round the world; the required inputs for this investment are also in our own control. Namely :

Time; and

Will power to persist.

The Indian experience of transformation of human nature suggests that balanced investment of time and will power in a few activities keeps a person motivated to persist in transforming himself. These are :

Investment in the health of the body through 'hatha Yoga' (Yogic exercises) and eating 'satwic food'—food that is pure, natural and prepared with love. Only a healthy body that can endure hardwork can carry a healthy mind. Most of our illnesses are caused by eating wrong food, overindulgence and lack of exercise. An investment of about 45 minutes a day in exercising the physical body by walking, jogging, workout in a gym, swimming or doing yoga can keep us fit, alert and motivated to transform ourselves.

Investment in the health of the mind. Thoughts, emotions, memory, imagination and discrimination are all functions of the mind. Just as face and voice of every man differs from another, so also his mental world, his mode of thinking, his way of understanding things and his reactions to events also differ. That is why in the Indian experience of transforming human personality, great emphasis is placed on the health and control of the mind. The major source of keeping the mind vigorous, stimulated and positive is 'swadhyae' i.e., reading. Reading should be a balanced mix of literature particularly the classics—be it Kalidasa or Shakespeare; contemporary fiction; books dealing with one's field of work; spiritual books; books dealing with leadership; and of course studying the lives of outstanding leaders. The aim of any one who aspires to improve should be to develop a capability to read at least 18 books a year which is the average reading score of the highly effective chief executives.

Investment in the spiritual health. Emphasis on spiritual growth in the process of transformation of man is a major part of our heritage. It's importance for leadership effectiveness is now finding recognition in the West also. Stephen Covey while recommending meditation observes that "the spiritual dimension is your core, your center, your commitment to your value system. It's a very private area of life and a supremely important one. It draws upon the sources that inspire and uplift you and tie you to the timeless truths of all humanity"[19]. It is through meditation for 20 to 30 minutes a day that we can contemplate over the timeless truths as also try to understand "who am I", "what is the purpose of life" and "what is the secret of enduring bliss" thus awakening the dormant divinity present in each one of us. Meditation helps us to rise above religions marked by churchiness or bell-banging temple going. "It is good to be born in religion but it is not good to die in one. Grow and rescue yourself from the limits of regulations, doctrines that fence in your freedom of thought, the ceremonies and rites that restrict and direct. Reach the point where churches do not matter, where all roads end from where all roads began"[20] This investment is the most productive in inspiring us to supreme efforts.

Investment in the health of society. Seva (service) to fellow human beings, not for a reward or recognition, but for its own sake is the most elevating experience in our lives. And yet we are reluctant to undertake such an activity. The pleasure that we derive from anonymous service is far beyond any other source of joy and yet most of us shy away from it. For transformation of our character, service without an selfish motives gives us potent inspiration to persist. It is so because "Service

broadens your vision, widens your awareness, deepens your compassion"[21], That is why service is a key activity for effective leadership. "If one who understands the spirit of service becomes a leader, that leader will always retain and enjoy his leadership through service. Without understanding service and first becoming a servant, one cannot become a leader"[22]. The Indian ethos in this field is summed up in the word 'parupkarya' which means 'living for others'. The great value of service has been experienced in all societies. Dr Hans Selye, in his monumental work on stress concludes that "a long, healthy and happy life is the result of making contributions, of having meaningful projects that are personally exciting and contribute to and bless the lives of others"[23]. Same is the conclusion of George Bernand Shaw when he says "This is the true joy in life—that being used for a purpose recognised by yourself as mighty one. That being a force of nature, instead of feverish, selfish little clod of ailments and grievances complaining that the world will not devote itself to making you happy. I am of the opinion that my life belongs to the whole community and as long as I live it is my privilege to do for it whatever I can"[24]. Our aim every day should be to "at least serve one other human being by making deposits of unconditional love"[25]. We can then become bringers of joy, hope and a ray of sunshine.

If we invest in our transformation as per the time tested measures discussed above then we shall acquire lifelong inspiration to grow and be masters of our destiny.

7.6 PRACTICAL HINTS ON HANDLING PEOPLE

The operative part of Leadership capability lies in the ability to handle people in a manner that they give their best for a cause, organisation and the task in hand. This capability depends on the strength and balance of TO BE in a leader—his Universal Inner Structure of Effective Leadership. Reinforcing this structure is within the reach of anyone who applies himself to this exciting endeavour with SINCERITY and WILL POWER till transformation takes place. Even while one is making an effort to improve the source of leadership a few practical hints to handle people will be of value to anyone who desires to be more effective

Most of the hints discussed in this section are based on practical experience of leaders in various walks of life. These are related to handling people working for a leader, his colleagues and his boss. A good leader never looks at people working for him as his subordinates; they are considered as members of his team. The dominant virtue in the technique of handling people is unselfish love like that of a good and affectionate mother; even when she uses the rod her motive is corrective and not punitive.

Handling people working for a leader

Self-control : No team captain can hope to control and inspire his team unless he learns to control and discipline himself. This is a difficult task, but without it, there is little chance for a man to become a successful leader. It requires a certain amount of philosophic outlook and frugality which is often associated with aristocrats and saints. Self-control does not only add to the leadership potential, it also is a source of great happiness.

Success and Failure : It is a basic trait of human nature that an individual ascribes successes of an organisation to the part played by him, and blames failures on the system. On the other hand, a good leader gives credit to his men for successes and takes responsibility for failures. This approach binds men together in a collective effort to work for the organisation.

Setting Targets : It is useful to let individuals themselves to set targets for work. In this event not only are they likely to meet these targets, but even surpass them.

Correcting Mistakes : A leader has often to correct the men who falter, show traces of weakness or fail. It is better to say "This is not what is expected of a person of your calibre and ability" rather than words to the effect "what else one could expect from a clot like you". The first approach enhances a man's self-respect even in failure. The second approach makes him your enemy.

We and not you : A good leader always projects himself as a part of the team and invariably talks in terms of "We" and not "You".

Accessibility : It is a leader's responsibility to ensure that he is accessible. He should institutionalise the time and place for meeting the members of his team. Tragedies and illnesses are a frequent occurrence in human life. A good leader makes it a point to find time for seeing men who are afflicted or who have difficult problems to tackle. Visiting them, in case they are hospitalised, should also be a matter of priority time allocation. You win lasting commitment from people thus handled.

Anger : A good leader does not lose his temper. However, righteous anger is very different from uncontrolled rage and should not be suppressed. However special care should be taken to uphold the honour and dignity of an individual in the presence of his colleagues and family members.

Recognition : Good and effective leaders have used the human urge for recognition with telling effect to foster interpersonal bonds with their people and to motivate them. They have scrupulously used the principle of 'praise in public and reprimand in private' to create an organisational culture in which people work 'much beyond the call of duty' to maintain excellence in their organisation. The real basis of making individuals feel like heroes is, of course, genuine care and unselfish love by the leader for his people. Some of the practices in this field that have been used with effect are :

- Smile and greet people by their names. There is no sweeter music to a man's ears than hearing his own name. "Kaya hall hai Sham Singh" (How are you Sham Singh) will get a warm response and commitment if you can add "tumahre bete Sunder Singh ki parhai kese chal rahi hai" (how is your son Sunder Singh doing in his studies) then Sham Singh's day is made and his dedication assured. If these brief interactions are in the native language of the man spoken to then the effect is even more lasting.
- Be on the lookout to spot good work which can be praised. when you notice it, then promptly give credit to the person in front of his colleagues. In special cases, have him photographed with yourself or even the chief executive. However, never let sloppy work go unchecked. But always ensure to tick off the man in private.
- Show personal interest in the development of your people and their career. Guide and help them to improve their skills.
- The practice of selecting the employee of the month and displaying his photograph on the notice-board has a very positive impact. This should be done only for genuine persons who do good work.
- Occasionally join your people and eat your lunch along with them.
- Call your people in small groups for tea or a meal to your home.
- Introduce your people to seniors or visitors pointing out and praising their strong points and achievements.
- On completion of a project or a special task, write a note of thanks to every member of the group for his contribution.
- Get photographs of your people in the company magazine if there is one, or in the media.
- Create symbols to team-work like a T-shirt with a logo or a company logo in the form of a lapel pin. To inculcate a spirit of dedication a lot of public and private sector companies have the same uniform from the CEO right down to the shop floor.
- Recognition should be prompt and timely to be effective. The Military has a system of immediate battle-field bravery awards. These are given by the senior commanders to individuals immediately after a battle to the few who have performed beyond the call of duty. This invariably leads to a high morale.

Handling Colleagues

It is a difficult category of people to handle. Competition, jealousy and one-up manship take their toll. However, there are a few practices which pay handsome dividends.

Be a Team Player : Always help your colleagues in their tasks and projects. A good team player always gets positive response. 'Do unto them what you expect them to do unto you' is the soundest practice.

Unfair advantage : Anyone who seeks on unfair advantage over his colleagues is labelled as a 'climber' or a 'safarshi' and earns their hostility. A good leader avoids this

Handling the Boss

An effective leader develops the skill to maintain good relationship with a boss. Some practical tips for this are :

- Know your boss. His background, his career in the field of his work, his habits, his methodology of work, his aspirations, his likes and dislikes. It enables you to anticipate his moods and wishes and that invariably is appreciated.
- Be dependable. When you undertake an assignment you must do everything humanly possible to complete it successfully. No boss really cares for a subordinate whose performance is uncertain. Honest mistakes can be tolerated but unreliability cannot be entertained. If you run into insurmountable difficulties in completing an assignment, then it is best that you inform the boss yourself, rather than his learning about it from other sources.
- Listen to your boss with undivided attention. Establish eye-contact with him to focus your undivided attention on what he is saying. Stop formulating responses in your mind which you feel will meet with his approval; this distracts attention from attentive listening. Read his body language to comprehend not only what he says but also what he implies. Pause before you respond in order to fully digest and understand what has been conveyed. Ask a question if you are in doubt or briefly summarize what has been conveyed. No boss likes a subordinate who has to be told things twice.
- Brevity in your speech to convey your thoughts clearly, with emphasis on the essentials, is necessary to get full value out of the time you get to interact with your boss. It requires forethought. A good aid is to reduce the most complex problems in a one page memo.
- Be diplomatic. Offer options for handling a problem with the pros and cons well articulated. It is more than likely that the boss will select the option which you prefer. Never reject out of hand what he suggests. Raise observations in the form of questions—"will it not cause disruption of schedule", "do we have people to implement such a sophisticated approach" and so on.

  To be diplomatic does not mean letting the boss make bad moves. Gently point out the inherent dangers. It is much better to be sincere. In the long run such sincerity wins the respect of the boss than mere flattery.
- It is wise to let your boss look good. Highlight his strengths to others. Before a meeting or a conference give him all the information or inputs well in advance and let him do the talking. During a meeting don't offer any fresh information unless he himself invites you to speak. Don't be afraid to let him take credit for your ideas. In the long run, it will do good to your relationship with him.
- Be a team player. While speaking about colleagues highlight their good points. rather than their weaknesses. You will gain in genuine respect.
- Solve your problems. A subordinate who is a problem solver is preferred to the one who is weepy.

Conclusion

In the ultimate analysis, handling people is a matter of attitude. It is expecting the utmost from them while caring for them completely. It is possible only if a leader can create an atmosphere in which there is free communication. Tolerating shirkers and parasites in the name of "being human" does a great deal of damage. Fortunately, such people are few and far between, and must be dealt with strictly.

There is no better commentary on leadership and a leader's relationship with the men he leads, than what Sun Tzu wrote more than two thousand years ago.

> "And, therefore, the general who is advancing does not seek personal fame, and in withdrawing is not concerned with avoiding punishment, but whose only purpose is to protect the people and promote the best interests of his sovereign, is the precious jewel of the state.
>
> Because such a general regards his men as infants they will march with him into the deepest valleys. He treats them as his beloved sons and they will die with him.
>
> If he cherishes his men in this way he will gain their utmost strength."

7.7 SUMMARY

Whether leaders are born or made continues to be debatable. Many of the virtues or qualities which constitute the inner structure of effective leaders cannot be taught. However, if a person has basic aptitude, he can become an effective leader by training. Much would depend on the effort the individual puts in for developing himself.

Since leadership is exercised by the mind (reflected in character and personality), the mind has to be trained to develop qualities which add up to the total leadership potential. Reading the lives of outstanding leaders is a time tested technique to improve and develop qualities of leadership. Effectiveness is an art which can be acquired by self-effort. Maintaining a diary is another method for self-development. Persistent efforts are required for enduring self-development.

There are no easy short-cuts to effective leadership. It is a capability which reflects the complete personality of a man. Consequently, the quality of leadership depends entirely on the quality of the man who exercises it. It should be seen that adoption of styles to improve effectiveness also lead to necessary improvement of the man, because style can only be the expression of the man. Consequently, the approach to improving effective leadership is to reinforce the Universal Inner Structure of Effective Leaders—particularly the ethical and moral core reflected in selflessness. It is well to remember that phonies can neither inspire nor lead and that the secret of success lies in the words of the well-known Austrian psychiatrist Dr. Victor E. Frankl in his famous book—Man's Search for Meaning :

"Again and again I admonish my students both in Europe and in America :

> Don't aim at success—the more you aim at it and make it a target, the more you are going to miss it. For success, like happiness, cannot be pursued; it must ensue, and it only does so as the unintended side-effect of one's personal dedication to a cause greater than oneself or as the by-product of one's surrender to a person other than oneself. Happiness must happen, and the same holds for success : You have to let it happen by not caring about it. I want you to listen to what your conscience commands you to do and go on to carry it out to best of your knowledge. Then you will live to see that in the long run—in the long run, I say :—success will follow you precisely because you had **forgotten** to think about it."

7.8 SELF-ASSESSMENT QUESTIONS

1) "Leaders are born and not made". Do you agree with the statement? Discuss.
2) What methods/techniques can be used to improve leadership potential?
3) "Reading biographies of effective (great) leaders is a time-tested technique for improving potential for leadership". Examine the statement and give your views.

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7) Stephen R. Covey in The 7 Habits of Highly Effective People—Page 46.

8) Ibid—Page 46.

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10) Ibid—Page 48.

11) Ibid—Page 91.

12) John Adair is 'Effective Leadership' Page 14.

13) Ibid—Page 25.

14) Anthony D' Souza in 'Leadership' BYB Haggai Institute Bandra—Bombay. Page 198.

15) Sri Sathya Sai Baba.

16) Stephen R. Covey—Page 92.

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18) Dr. Art Ong Jumsai Na Ayudhya was educated in a public school in England and subsequently at Cambridge. He is an engineer by profession who has been associated with the space programme in the USA. He is a frequent visitor to India to draw inspiration from spiritual values of this land.

19) Stephen R. Covey—Page 292.

20) Peggy Mason and Ron Laing quoting Sri Sathya Sai Baba in, 'Embodiment of Love', Sawbridge Enterprises, London.

21) Sri Sathya Sai Baba in Facets of the Divine Diamonds—Page 57.

22) Sri Sathya Sai Baba in 'Words of Jesus and Sathya Sai Baba' Compiled by Dr. H.K. Raky, FRCS Accra, Ghana.

23) Stephen R. Covey—Page 299.

24) Ibid.

25) Ibid.

Appendix A

CHECKLIST :
DO YOU HAVE SOME BASIC LEADERSHIP QUALITIES ?

List the five key characteristics or personal qualities which are expected or required in workers in your field :

	Good	Average	Weak
_____			
_____			
_____			
_____			
_____			

Now rate yourself in terms of each of them—Good, Average or Weak. Circle the number where your would place yourself on the following continuum :

Very introvert 5 4 3 2 1 2 3 4 5 Very Extrovert

(Leaders tend to be slightly more extrovert than introvert on this scale, i.e. they are ambiverts—mixtures of both)

	Yes	No
Have you shown yourself to be a responsible person?	☐	☐
Do you like the responsibility as well as the rewards of leadership?	☐	☐
Are you self-sufficient enough to withstand criticism, indifference or unpopularity from others and to work effectively with others without constant supervision?	☐	☐
Are you an active and socially participative person?	☐	☐
Can you control your emotions and moods—or do they control you?	☐	☐
Have you any evidence to suppose that other people think of you as essentially a warm person?	☐	☐
Can you give instances over the past three months where you have been deliberately dishonest or less than straight with the people that work for you?	☐	☐
Are you noted for your enthusiasm at work?	☐	☐
Has anyone ever used the word 'integrity' in relation to you?	☐	☐

Appendix B

CHECKLIST :
ARE YOU RIGHT FOR THE SITUATION?

	Yes	No
Do you feel that your interests, aptitudes (e.g. mechanical, verbal) and temperament are suited to the field you are in?	☐	☐
Can you identify a field where you would be more likely to emerge as a leader?	☐	☐
How you have developed 'the authority of knowledge'? Have you done all you can at this stage in your career to acquire the necessary professional or specialist training available?	☐	☐
Have you experience in more than one field or more than one industry or more than one function?	☐	☐

Do you take an interest in fields adjacent to your own and potentially relevant?

sometimes	☐
never	☐
always	☐

How flexible are you within your field? Are you:

Good	You have responded to situational changes with marked flexibility of approach; you read situations well, think about them and respond with the appropriate kind of leadership	☐

Adequate	You have proved yourself in two situations, but you fear some situations; you are happiest only when the situation is normal and predictable	☐
Weak	You are highly adapted to one particular work environment and cannot stand change. You are often called rigid or inflexible.	☐

Appendix C

EXERCISE : Self-Appraisal

This exercise gives you the opportunity to appraise yourself and to contrast your self-image with the way you would prefer to be. It also provides a chance to obtain an appraisal of yourself from another person you trust.

Step 1

Complete all these blanks of the self-appraisals. They are designed to help you describe your actual and preferred ways of reacting of relating to others and of leading. For each quality listed, write the number on the scale that best describes your actual behaviour in the left column. Then write the number that best describes the way you would prefer to act in the right column.

Step 2

Check the three items in each list on which you showed the greatest discrepancies between your actual and preferred ratings. If your preferred rating is higher than your actual rating, mark as a "+" (plus). If your actual rating is higher, mark as "–" (minus). Circle the marks for those that you feel you presently can and want to improve the most.

Step 3

Compare your self-perceptions with someone whom you trust and who is willing to give you frank and genuine feedback.

			SELF-APPRAISAL Actual	Preferred	Others' Appraisal of you
1) STYLE OF REACTING					
TENDENCY TO SEEK OUT OPPORTUNITIES					
Content to wait	1:2:3:4:5:6:7	Always searching	_____	_____	_____
BREADTH OF FOCUS					
Intensive, narrow focus on given problems	1:2:3:4:5:6:7	Extensive search for solutions on given problems	_____	_____	_____
SPEED OF DECISION					
Defer judgment as long as possible	1:2:3:4:5:6:7	Decide as quickly as possible	_____	_____	_____
INTUITIVE VS OBJECTIVE					
Rely exclusively on feelings	1:2:3:4:5:6:7	Rely exclusively on facts	_____	_____	_____
IMPULSIVENESS					
Think before I speak	1:2:3:4:5:6:7	Speak before I think	_____	_____	_____
PROBLEM SOLVING					
Always solve problems for myself	1:2:3:4:5:6:7	Learn exclusively from others	_____	_____	_____

PERSISTENCE

Give up too quickly on tough problems	1:2:3:4:5:6:7	Never give up	_____	_____	_____

SELF-PROBLEM IDENTIFICATION

Never see myself as part of the problem	1:2:3:4:5:6:7	Always see myself as part of the problem	_____	_____	_____

EXTERNAL-INTERNAL FOCUS

Completely controlled by my environment	1:2:3:4:5:6:7	Completely controlled by my inner thoughts	_____	_____	_____

UNDERSTANDING WHY I DO WHAT I DO

No understanding	1:2:3:4:5:6:7	Complete understanding	_____	_____	_____

REACTIONS, SUCCESS-FAILURE

Stimulated most by reproof, failure, negative feedback	1:2:3:4:5:6:7	Stimulated most by praise, success, positive feedback	_____	_____	_____

2) STYLE OF RELATING TO OTHERS

ABILITY TO LISTEN TO OTHERS WITH UNDERSTANDING

Inattentive/ unreceptive	1:2:3:4:5:6:7	Observant/ Sensitive listener	_____	_____	_____

WILLINGNESS TO SHARE FEELINGS (EMOTIONS) WITH OTHERS

Completely unwilling	1:2:3:4:5:6:7	Completely willing	_____	_____	_____

AWARENESS OF THE FEELINGS (EMOTIONS) OF OTHERS

Completely unaware	1:2:3:4:5:6:7	Sensitive Empathetic/ Responsive	_____	_____	_____

TOLERANCE OF CONFLICT AND ANTAGONISM

Not tolerant	1:2:3:4:5:6:7	Tolerant	_____	_____	_____

BEING WARM AND FRIENDLY TO OTHERS

Cold/ Reserved	1:2:3:4:5:6:7	Warm/ Outgoing	_____	_____	_____

ACCEPTANCE OF AFFECTION AND WARMTH FROM OTHERS

Uncomfortable	1:2:3:4:5:6:7	Very comfortable	_____	_____	_____

REACTING TO COMMENTS ABOUT MY BEHAVIOUR

Reject/ Resentful/ Defensive	1:2:3:4:5:6:7	Accept and Grow	_____	_____	_____

WILLINGNESS TO TRUST OTHERS

Very suspicious/ distrustful	1:2:3:4:5:6:7	Very trusting	_____	_____	_____

ABILITY TO INFLUENCE OTHERS

Completely unable	1:2:3:4:5:6:7	Completely able	_____	_____	_____

RELATIONS WITH PEERS

Very competitive	1:2:3:4:5:6:7	Very cooperative	_____	_____	_____

3) STYLE OF LEADING

RISK-TAKING UNDER UNCERTAINTY

Extremely cautious	1:2:3:4:5:6:7	Extremely adventurous	_____	_____	_____

DELEGATION

Prefer to let others solve problems	1:2:3:4:5:6:7	Prefer to solve problems myself	_____	_____	_____

CONCERN FOR WELFARE OF SUBORDINATES

No concern at all	1:2:3:4:5:6:7	Complete concern	_____	_____	_____

RELATIONS TO HIGHER AUTHORITY

Always depend on higher authority	1:2:3:4:5:6:7	Always depend on oneself, be self-reliant	_____	_____	_____

TIME PERSPECTIVE

Short-run maximizer	1:2:3:4:5:6:7	Always consider the long-range view	_____	_____	_____

INDIVIDUAL OR GROUP DECISIONS

Prefer individual decisions	1:2:3:4:5:6:7	Prefer group decisions	_____	_____	_____

POLITICAL VS. PARTICIPATIVE

Rely on political alliances, deals, bluffs	1:2:3:4:5:6:7	Rely on open communication, involvement, trust	_____	_____	_____

USE OF AUTHORITY IN GETTING WORK DONE

Rely on my position and power	1:2:3:4:5:6:7	Rely on persuasion and/or personal skill and knowledge	_____	_____	_____

TASK VS. HUMAN RELATIONS CONCERNS

Exclusively concerned with getting job done	1:2:3:4:5:6:7	Primarily concerned with maintaining good relations	_____	_____	_____

Exercise Personal Effectiveness for Leadership

Active and effective individuals display a set of fairly common characteristics. In the same way, others continually display a set of characteristics regularly associated with being less active or effective. This exercise is designed to help you see where you stand.

On the left side of the scale are the characteristics of inactive and ineffective people and on the right side the characteristics of active and effective. Mark on the scale where you think you are.

You can do this exercise individually and then get an honest feedback from a colleague you trust. If this exercise is done in a small group of your choice, share your ratings of one another, giving reasons or explanations for your rating with concrete examples of your style of being or behaving.

1) I am usually passive and lack energy and vitality — 1 2 3 4 5 6 7 — I am usually active and have a high energy level

2)	I avoid 'stretching' experiences	1 2 3 4 5 6 7	I continually try to stretch myself
3)	I avoid challenge and seek to be undisturbed	1 2 3 4 5 6 7	I seek challenge
4)	I am largely influenced by the views of others	1 2 3 4 5 6 7	I am clear about my personal values and priorities
5)	I set low standards	1 2 3 4 5 6 7	I set high personal standards
6)	I misuse time and energy	1 2 3 4 5 6 7	I use time and energy as valuable resources
7)	I avoid self-knowledge and insight	1 2 3 4 5 6 7	I continually seek self-knowledge and insight into myself
8)	I avoid feedback	1 2 3 4 5 6 7	I welcome feedback
9)	I opt out when the going gets tough	1 2 3 4 5 6 7	I always see things through
10)	I am generally dissatisfied with others	1 2 3 4 5 6 7	I generally get along well with others
11)	I never show concern for others	1 2 3 4 5 6 7	I continually show concern for others
12)	I am always tense	1 2 3 4 5 6 7	I am always relaxed and calm
13)	I tend to manipulate others	1 2 3 4 5 6 7	I am always open and honest
14)	I am basically unhappy with my life	1 2 3 4 5 6 7	I am basically happy with my life

The above two sets of characteristics (left and right) when placed side by side become stark alternatives. They are in reality choices which we are above to make about ourselves, our approach to life and our approach to work. Few people exhibit either an extremely active or an extremely passive approach to life. Most individuals fall somewhere in the middle of the scale. Personal growth and development are results of moving away from the passive towards the active. Active and effective people tend to find life an adventure, enjoy variety and always seem to end up enriched. On the other hand, passive and ineffective people seem always to be in a state of inadequate adjustment to the unsatisfactory nature of things. And active people make better and dynamic leaders.

NOTES

NOTES

Uttar Pradesh
Rajarshi Tandon Open University

MBA-4.3

Strategic Management

3

Block

3

STRATEGY AND TECHNOLOGY

BLOCK 3 STRATEGY AND TECHNOLOGY

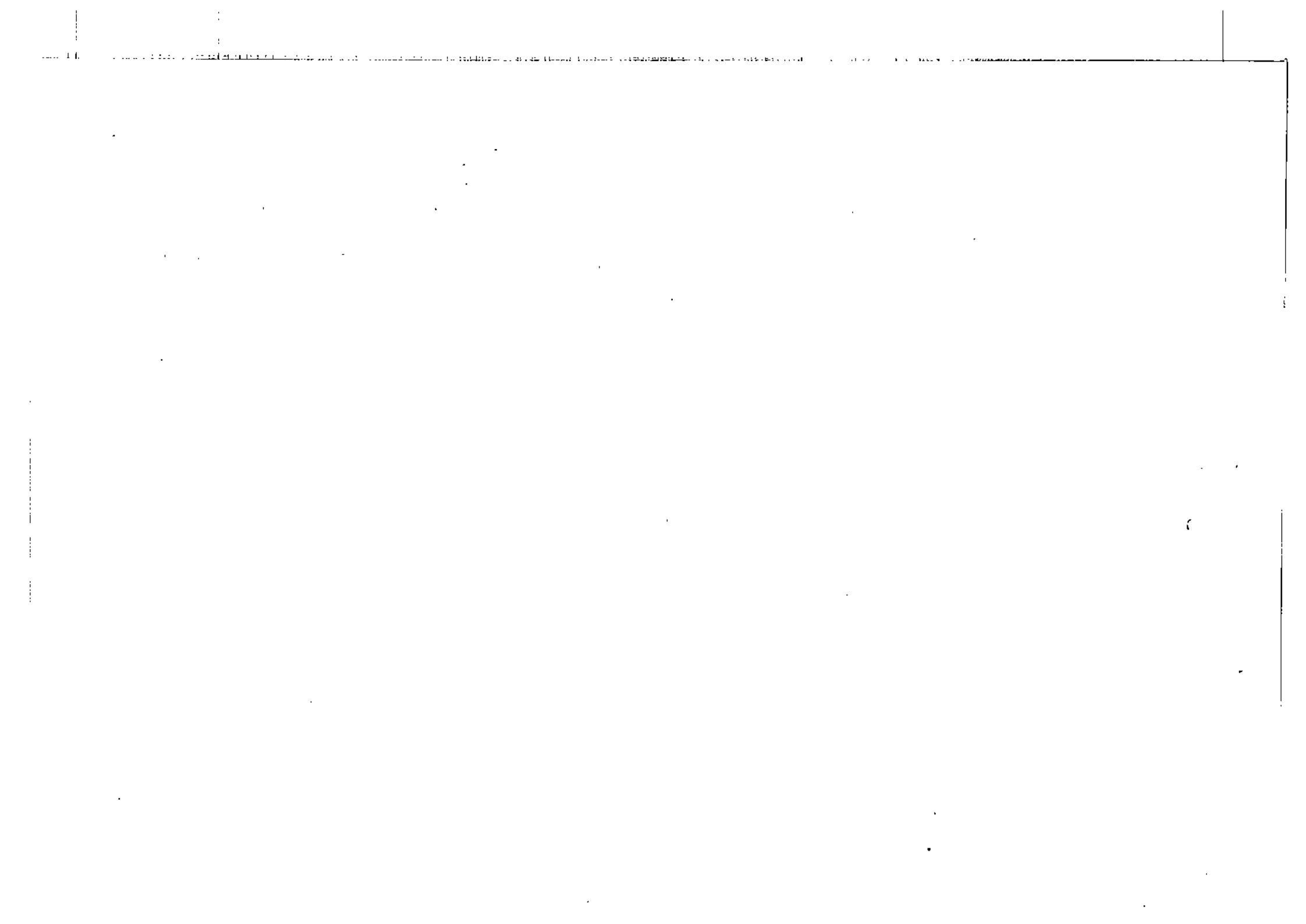
The environment in which a business operates today is rapidly changing. A major agent of this change is technology. The companies and governments in the advanced countries spend substantial funds on research and development. Though the proportion of funds spent on R&D in relation to GNP in India is relatively small, we cannot remain unaffected for long from the impact of new technologies developed in other countries of the world. The globalisation of markets and increased competitiveness are the two important forces which impell an organisation to induct new technology in its production and other systems. Though many companies may have formal long range corporate plans and strategies, yet these may not incorporate long range technology plans as an integral part of the process. Such a neglect may prove disastrous to the organisation. It is naive to assume that the impact of new technology is limited to science based industries. All types of organisations, whether industrial or service, are subject to the influence of new and changing technology. Adequate attention, therefore, has to be paid to the technology aspects in the strategic management process.

This Block focuses on the link between strategy and technology and also on the ways and means by which technology can be improved or updated. The block has three units.

Unit 8 considers some broader aspects of **Technology Management.** It begins by explaining the concept of technology and technology life cycles. The need for considering technology as a strategic element and also as a strategic resource is highlighted. The need for planning for technology and various techniques for technology forecasting are briefly described. Finally the key tasks and organisational linkages in technology management and the ways by which technology gaps can be identified are discussed.

Unit 9 looks at **Inhouse Development of Technology**. The need for integrating R&D into corporate strategy is stressed. The various factors that make for successful management of innovation process are discussed. The time horizons for inhouse development of technology strategies and resource analysis for this purpose are also discussed. A real life case study on technology development and how R&D can provide necessary support to assimilate imported technology is presented in an Appendix to this unit.

Unit 10 deals with various aspects of **Acquisition and Absorption of Technology**. The buyer-seller relationship in technology transactions is explained. The various modes of technology transfer are briefly discussed. Some criteria for evaluation of technology from the selection viewpoint are explained. Certain other aspects, viz., how technology transfer benefits can be maximised, how technology transfer process can be monitored and the role of licensor and licensee are also considered. One of the three appendices given at the end of the unit presents the experience of a large public enterprise with regard to absorption of imported technology.



UNIT 8 TECHNOLOGY MANAGEMENT

Objectives

After studying this unit you will be able to understand :

- the meaning of technology, its relevance to industry as a strategic resource, the concept of technological life cycle, and costs and benefits over the life cycle
- the impact of technology on productivity and growth
- the key concepts in relation to management of technology at the enterprise level
- the relevance of planning and the key elements in technology planning.

Structure

8.1 INTRODUCTION : THE CONCEPT OF TECHNOLOGY

Technology essentially means "know-how" that is, ways of designing, manufacturing or utilising things. It can also be defined as the know-how to transform concepts into goods and services for the satisfaction of customers. It is a broad form of resource endowment — an embodiment of knowledge for production of goods and services. Technology is imbibed in various forms, the most common of this could be identified in the machineries used for manufacture or the skills that are transformed through human beings. These forms would comprise know-how, know-why, technological processes, designs, drawings, specifications, computer programmes and other information, besides industrial training, industrial property rights etc.

8.2 TECHNOLOGY AS THE STRATEGIC ELEMENT

Technology is strategic in the sense that decisions regarding its choice are difficult and costly to reverse and have far-reaching, long-term implication for a company. For example, incorrect choice of technology for a product or process in a company could completely jeopardise its growth plans. The benefits that were expected to accrue on account of introduction of that product or process may never be realised. Organisations can flourish or fail, depending upon their choice of technology. Many examples are available from both public and private sector companies to illustrate this point. Maruti's success in the automobile sector is attributable to a large extent on the right choice of technology (both design and production) for the manufacture of compact high quality fuel efficient car. On the other hand, the major reason for the poor performance of Surgical Instruments Plant of IDPL, Madras was the wrong choice of technology.

8.3 TECHNOLOGY LIFE CYCLES

Just as products have 4 distinct phases in their life cycles viz. evolving, emerging, maturity and decline, echnologies too undergo different phases like embryonic', 'growth', 'mature' and 'decline' during their life cycle.

Fig. 8.1 : Technology Life Cycle

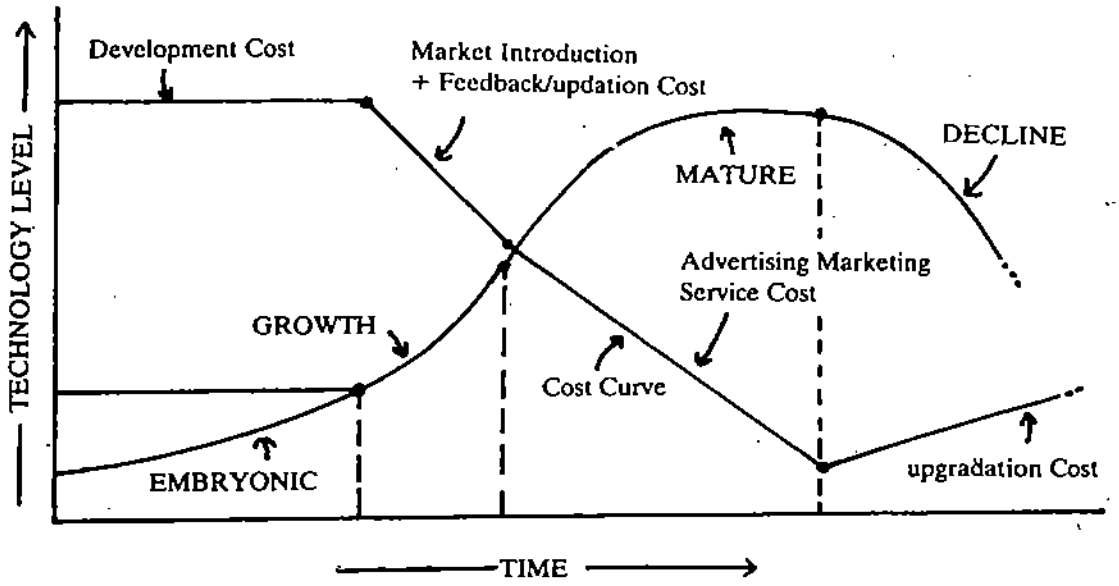


Figure 8.1 illustrates these phases on a curve. It can be seen that in the 'embryonic' phase of technology development, the time period and the financial costs of technology development are quite high although the technology level is still low. Most of the development costs in this phase are incurred on the laboratory scale development, with no financial returns. In the next phase , viz., 'growth', the technology graduates from the laboratory stage to the marketable level, while at the same time it undergoes updation and modification based on the operational feedback received about the performance of the first set of products introduced in the market. In this phase, financial returns to the company grow at a much faster pace than the costs incurred on technology modifications. Of late, the time period required for introduction of a new technology to market from the laboratory scale is getting reduced and so the growth phase is getting shorter day by day. In the maturity phase which lasts for quite some time, the company reaps full benefits from the technology developed with practically no additional costs. Every technology comes to a 'decline' phase in its life cycle after sustaining a maturity phase, which depends upon the type of technology and competition.

Activity 1

Identify three companies in the industrial and service sectors where choice of a particular technology has been good or otherwise. Also indicate sectors such technologies were developed or acquired.

Company Name	Technology Choice		Source
	good	bad	
1.			
2.			
3.			

8.4 IMPACT OF TECHNOLOGY ON MANKIND

Technology is a major stimulus for change and has become synonymous with economic progress. Mankind had made quantum leaps in living standards and economic levels through the use of specific technologies in the past. For example, our civilisation has gone through different phases of evolution in which technologies have played a major role. Right from the stone age, technological breakthroughs like the discovery of fire, production of cereal/crops, oil and mineral exploration, invention of wheel, printing press, steam engine, electricity, automobile, aeroplanes, rocket propulsion, nuclear energy, electronics, radio & T.V., computers, transistors, ICs, etc. have changed the very fabric of life. In our times, the pace of technological obsolescence has become unprecedented with the advent of ICs and subsequent development of micro-processors, LSIs, VLSIs etc. Economic progress achieved so far has shown an exponential nature of technological development and we have come to a stage where markets are technology-driven to a greater extent and this process seems irreversible. We are entering a development phase in which our lives are getting revolutionalised with the advent of science-based technologies like genetic engineering, super conductivity, bionics, optronics, micro-electronics, material sciences, artificial intelligence, fuzzy logics etc.

In fact, countries which dominate the global scene today are the ones which also happen to be technology leaders. Technology has been responsible for bringing about major changes in agriculture, health, transportation, communication and general industrial development to varying degrees. Classic studies by Kendrick, Solone and Dennison reveal that bulk of improvements in output of developed countries can be attributed directly to technological changes[1]. A Brooking's Institution study ascribes 44% of productivity increase in the USA to technological innovations[2]. According to another study, almost 40% of GNP growth in USA, during the past two decades, was on account of technological innovations[3]. More than 50% of GDP growth in EEC countries has been attributed to technological progress as distinct from the contribution of manpower and capital[4]. More recently, we have the Korean example where dramatic changes have been brought about through extensive use of technologies imported from developed countries. These technologies were adapted and further improved through indigenous R&D efforts. A few developed countries like USA, West Germany, U.K., Japan and France dominate the technology scene in the world today. Nearly 70% of all foreign collaborations approved during the last 10 years for importation of technology to Indian companies were from the above countries. Thus, technology has become an important factor to be reckoned with at the national level.

8.5 TECHNOLOGY—AS A STRATEGIC RESOURCE

The Government of India came out with a comprehensive technology policy statement (TPS) in 1983 which sets out policy directions for technology development in the country. However, as early as in 1958, the Government had adopted the Science Policy Resolution (SPR), drafted by Nehru, which inter alia stated:

> "The key to national prosperity apart from the spirit of people, lies in the modern age, ... in the effective combination of three factors: technology, raw materials and capital, of which the first is perhaps the most important, since the creation and adoption of new scientific techniques can, in fact, make up for deficiency in natural resources and reduce the demands of capital."

It is evident from the above that technology was identified as a major resource for national development even as early as in 1958.

At the enterprise level, technology is an important strategic resource, like other resources viz. manpower, materials, finance etc. and it ought to be managed as such. Effective management of technology has enabled many international organisations to make a niche for themselves in the world market (e.g. GE, IBM of USA, Matsushita, Hitachi, Toshiba, Canon of Japan, ABB of Sweden, Siemens of West Germany) through technological excellence. The strategic nature of technology, calls for the management of this resource as a part of overall business planning process to gain higher competitive advantage.

Activity 2

Identify the key issues with regard to economic environment of the country and their future prospects. What could be the technological prescription to resolve these issues? Discuss the same with your colleagues.

	Area / Sector	Key Issues	Technology Prescription
1.	Social/Education		
2.	Industry/Manufacturing		
3.	Industry/Service		
4.	Agriculture		

8.6 MANAGEMENT OF TECHNOLOGY AT THE ENTERPRISE LEVEL

The degree to which technology plays a role in a company's strategy varies from one company to another. For some, technology plays a major role, for others it may be minor. However, every company employs technology of some sort which has to be managed. It is one resource which influences the entire gamut of business management operations viz. human resource management, financial management, engineering, manufacturing, marketing etc. more intensively than any other single factor. This is primarily due to:

- shorter life cycles of technology (i.e., the rate of technological obsolescence becoming significantly high).
- globalisation of markets (i.e., business needs have to be viewed in global context).
- business becoming more and more technology-driven rather than market-driven.
- multifold increase in technology trade (i.e., technology becoming an international commodity).
- emergence of faster communication networks and information technologies (ideas know no national barriers).
- significant reduction of time between innovation and commercialisation of innovative products.
- fueling of competition through liberalisation of economies.
- research and development becoming extremely capital and skill intensive.

In view of the above developments technology planning is becoming an essential element of management of technology for an enterprise.

8.7 PLANNING FOR TECHNOLOGY

Technology needs of any large corporation facing international competition in hi-tech areas cannot be solely met through inhouse R&D efforts. These have to be first assessed over a time span of 10 years or so, depending upon the market requirements, both current as well as emerging. The first task in planning for technology is identification of key technologies with reference to company, which are crucial to its business operations. Necessary financial and human resources must be committed by the company for the development of these technologies. The next step in technology planning is to look ahead and prepare for change instead of being overtaken by surprises. The following are the essential components of Technology planning:

- Technological forecasting, identification of technology gaps and time frame available to bridge the gaps.
- Evaluation of technology options and identification of route for technology updation — acquisition or indigenous development.
- In case of acquisition : Identification of possible sources, evaluation and choice of technology, finalisation of terms of purchase, managing the technology transfer process.
- In case of indigenous development : Focus on whole chain of events from concept to marketing.

- Absorption/adaptation of imported/indigenous technology to meet local needs and specific requirements, generation of know-why capabilities and spin-off products.

Thus, there are two main routes for technology upgradation: (1) Indigenous development through R&D and (2) Technology acquisition. In today's world, technology has become a global commodity and there is nothing like self-sufficiency in technology. Technology generators are also major technology buyers and there is a global Technology Market existing today. The country's technology policy provides for a judicious mix of indigenous and imported technologies. A company must, therefore, assess both its short-term and long-term technology needs and choose a strategy of indigenous development or acquisition, depending upon the market/business needs. In view of the heavy R&D costs and limited time available to upgrade or generate new technology due to market pressures, many companies prefer technology imports which also prove to be cost effective. However, Technology Managers should plan a technology transaction in such a manager that the company, through one time import of technology and its subsequent absorption and adaptation through inhouse R&D, should be able to bridge the gap between the suppliers and receivers of technology and thus eliminate continued external dependence. The key factors to be considered while deciding upon a make or buy option, viz., indigenous development vs. technology acquisition could be as follows:

Acquisition of Technology is Preferred where

a) Technology gap is high and inhouse R&D is expected to be too costly and time consuming
b) Technology is available easily on attractive terms. Indian competitors have access to contemporary technology either through collaborations or through their principals (in case of Multinational or Joint Venture companies).
c) Customers prefer a particular technology or insist on back-up guarantee from a collaborator.

Inhouse Development of Technology is Preferred where

a) Gap is narrow to enable inhouse development in time.
b) There is not much competition in the area or market is still in the nascent stage.
c) Technology is not available commercially, e.g., technology for nuclear, space or defence applications.
d) Technology acquisition cost is prohibitive.
e) Sufficient skills/expertise are available inhouse/in the country to undertake indigenous development.
f) Cost of indigenous R&D, including demonstration plant/prototype etc., is within reasonable limits.

Even where Technology acquisition has been decided as the route for technology upgradation, inhouse R&D efforts are essential for effective absorption and adaptation of the acquired technology, carrying out further improvements and generation of know-why capabilities. In the absence of the R&D set up, absorption of acquired technology would always be incomplete, resulting in perennial dependence on collaborators. R&D should supplant the imported technology and carry out incremental improvements and upscaling so that the technology levels remain contemporary with the passage of time and repetitive imports are avoided.

Activity 3

Choose two product lines in each of the manufacturing (engg.) industry, service industry and strategic industry and identify major technology gaps. Indicate, with reasons, whether these gaps can be bridged through in-house (indigenous) efforts or through acquisition.

	Areas/ Product line	Tech. gaps	Bridging sources	Reasons
1.	Manufacturing Industry (Automobile, M/c Tools)			
2.	Service Industry (Hoteling, Computer)			
3.	Strategic Industry (Atomic Energy, Defence)			

8.8 TECHNOLOGY FORECASTING

Forecasting is an essential element of any planning process. It is recognised that forecasting is difficult, especially because it relates to future, which is beset with great uncertainties. However, the use of forecasting techniques for business planning has found increased application in recent years due to the development of various mathematical models and structured intuitive methodology for forecasting. Forecasting for technology is not heard so often, as in the case of other areas like weather forecasting, sales forecasting, demand forecasting, etc. It must, however, be understood that success in technology race is dependent to a large extent on our ability to identify emerging/future technologies well ahead of market needs so that adequate time frame is available for development of marketable technologies, either through in-house generation or acquisition from outside. Hence, technology forecasting is an important element of technology planning process. This fact is normally not recognised. In addition to this, technology forecasting is considered to be a highly risky venture. Normally economic or business planning does not take into account technology forecasting. As the technology is increasingly based on science and innovations, it is both relevant and easy to determine when the current technology will reach its physical limits depending upon the status of upgradation process. If large amounts of R&D investments have to be made by corporations to generate in-house technologies, they would necessarily have to undertake technology forecasting to ensure that the technologies developed at huge costs ultimately reach the market. Technology forecasting process is much more complex as compared to economic forecasting process (Demand/sales forecasting etc.). It is because the finer analytical techniques used for this process require substantial amount of data regarding a number of technology related factors like technological obsolescence rates in the past, upgradation trends for key features of power-to-weight ratio, processing speed to size-ratio, efficiency and reliability factors, rate of development regarding use of input materials, venture capital financing volume - to - success ratio, etc. Availability of this kind of data at a single place regarding any technology is nearly impossible. Various sources are to be tapped to collect such data which, even if possible, requires substantial time and cost. Even if all the required data is available, high risks (probability to fail) are still associated with the results so arrived at.

Relatively less complicated techniques which are not so analytical in nature, are based on the opinions and perceptions of the experts in the field. Methodologies and expertise are different for different techniques. These techniques also require past data on technology to supplement the knowledge base already available with the experts. Risks are still unavoidable with projections that are made using these techniques also.

Forecasting Process

Choice of a particular forecasting technique is dependent upon the availability of data and resources (financial, skills and computation facilities). Technology forecasting process determines the starting point for identifying or projecting future trends regarding state of technology by using specific techniques or a combination of the same, while the specific methods to project the data are determined by the technique itself. These techniques are the same as used for economic forecasting and some of these are : Opinion polling, trend analysis, time series analysis, Heuristic techniques, etc. Broadly, technology forecasting process can be categorised into two main types viz., **Exploratory Forecasting** and **Normative Forecasting Process.**

In "Exploratory Forecasting Process", technology capabilities, features or parameters developed over the years are extrapolated into the future. In "Normative Forecasting Process", future technology related targets or goals are set first, and then various critical variables that have a bearing/influence on the target technology development are identified, along with the limiting constraints that must be tackled to achieve the desired goals.

Forecasting Techniques

On the basis of usage for technology forecasting, the techniques could be categorised as follows :

1 **Intuitive Methods:** As the name suggests, these methods are based on the intuition that experts have in their fields of specialisation. According to the methodology adopted to generate and compile opinions or perceptions these methods differ from one another. Four popular methods under this category are:

1. Expert opinion
2. Polls
3. Panels
4. Delphi

In fact each of these methods in the order given above is an improvement upon the previous one and is a better structured approach to arrive at a more reliable forecast. Matrix given below provides a feature by feature analysis of these methods.

	Expert Opinion	Direct Expert Interaction	Expert Perception exchange	Multi skill Expert participation	Iterative Improvement of perception	Presence * of band wagon/ Majority opinion/ vocal domination	Relative reliability of forecast
Expert Perception	Yes	–	–	–	–	–	Low
Polls	Yes	Yes	Yes	–	–	High	Low
Panels	Yes	Yes	Yes	–	Yes	Low	Medium
Delphi	Yes	No	Yes	Yes	Yes	Nil	High

* Presence of so called "Bandwagon" or strong vocal domination means that more forceful individuals would force their perception as the real forecast.

Delphi technique has been used quite often for technology forecasting. This technique was used in BHEL for technology forecasting for power generation equipment as brought out by Garde & Patel[5].The authors have also compared the finding of their study with the results of a similar study carried out in BHEL over 8 years earlier. A review of this paper brings out that insofar as the types of new technologies are concerned, the predictions have come out to be quite correct. Findings have, however, not been so reliable insofar as the time frame for introduction of a particular technology is concerned. In almost all cases, the time frame projections have slipped, bringing out optimism in time frame projection. The paper, however, concludes that results of such a study could be used for planning at National level, as well as for formulating specific R&D projects at the organisation level.

2 **Trend Extrapolation & Co-relation (Trend Analysis):** This is a common and popular technique of forecasting widely used by economic scientists and engineers for planning purposes. Even though the initial data requirements are substantial, the ease in using these techniques is more attractive. However, the accuracy of the projections has not been found to be of a very high order. In this method, the past improvements in various parameters related to the technology are plotted against time. Longer the period cover, the better it is, as the trend can be assessed with higher accuracy. This trend is then extrapolated into the future assuming that the future would also follow the past experience/trend. The continuity of the technology is also assumed to be maintained. For example, in case of power generation equipment, improvements in power to weight ratio, power to loss ratio or conversion efficiency over the years are plotted against time and then the past trend is extrapolated into the future. Such extrapolation may be termed as simple extrapolation as it does not cater to technological discontinuities or technology substitution (i.e. so long as technology cycle is not on a decline phase). In case of power equipment simple extrapolation for instance does not take into account the consequences of superconductivity development if it makes a breakthrough.

There are, however, situations when the technologies are substituted/discontinued e.g. Mechanical typewriter to Electric typewriter to Electronic typewriter; Diode Tube valves to Transistor to ICs; DC Electric transmission to 3 ph-AC transmission to HVDC transmission etc. In such a situation the substitution of technologies is plotted against time frame for extrapolation. This is usually termed as "Substitution (Trend) Extrapolation".

Both of the trend extrapolation techniques involve curve fitting i.e. the past trend is fitted to nearest standard curve to extrapolate. The mean and the variance/deviation is thus found and is subjected to statistical analysis. Both curve fitting and extrapolation are facilitated by extensive use of computers today. The standard curves that are commonly used to fit the past

trend of technology developments/changes are — Linear, exponential, double exponential, S-shaped, etc.

In some cases the past improvements of technical parameters follow a very complex trend and cannot be predicted/extrapolated easily into the future. In such cases, it is not possible to fit any standard curve. To forecast such technological advancements, it becomes necessary to corelate the improvements in the concerned parameters with those in other related parameters over a period of time. For example, the advancements in electrical machines (generators as well as motors) technology are greatly dependent upon improvements in related technologies like: magnetically conductive materials technology, insulation technology, coolant technology etc. In case of Integrated Circuits, (ICs), technology advancements are related to silicon wafer slicing technology, etching technology, packaging technology etc. Likewise, successful development of superconducting materials at room temperatures will revolutionalise a whole gamut of other technologies related to generation, transmission, distribution and utilisation of electrical energy. Hence the future trends in technological parameters which are more complex are expressed as a result of the corelationship between two or more related parameters. This in turn requires substantial data with reference to the concerned parameters, as well as related information for direct or indirect parameters. Due caution has to be exercised identifying and choosing only the critical parameters, avoiding the less important ones. Otherwise the management of extrapolation of mass of information would be almost impossible.

3 **Simulation Models for Forecasting** : If we have sufficient data regarding the technological parameters/areas of interest, as well as information for the related factors, simulation models are extremely useful in predicting the future course of technology development. The key lies in development of mathematical relationship as an expression of the various related parameters and the parameter of interest. The solution to the model is developed by the use of computers. Variation(s) in related parameter(s) are generated by submodels based on past development trends of these parameters. These variations are fed to assess the resultant advancements with reference to the particular parameter of interest. This method facilitates assessment of technology upgradation in a dynamic environment.

The effective utilisation of this method, however, depends upon the availability and accuracy of certain variables, such as availability of sufficient data.

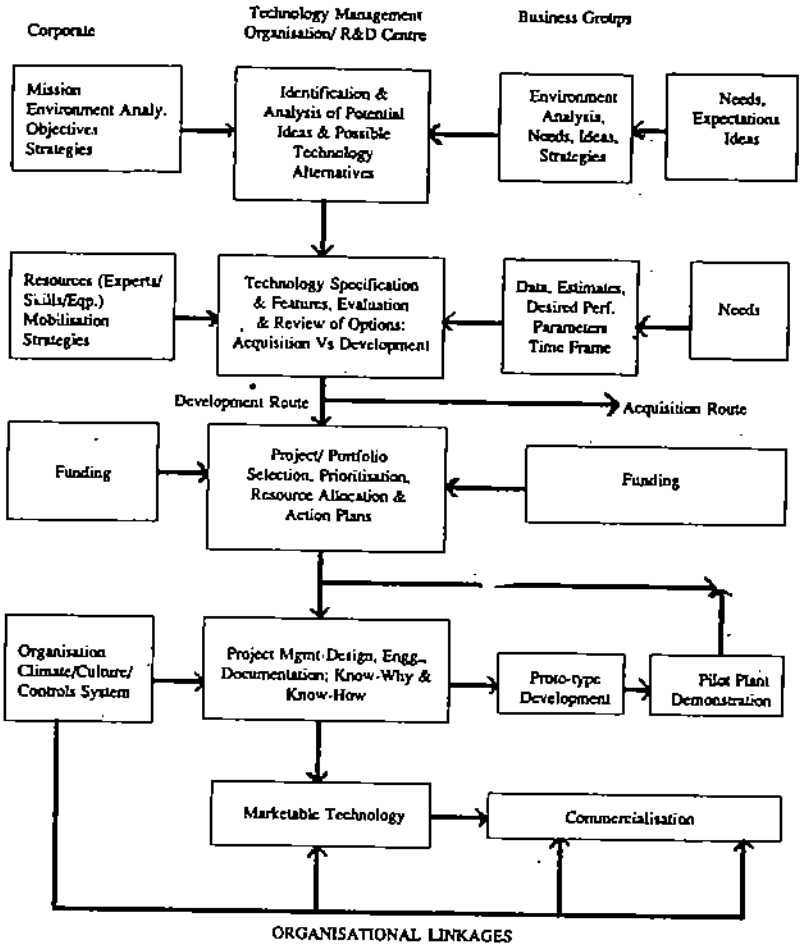
In practice, feeding the model with accurate input data in respect of each of the above variables is rendered difficult due to uncertainties and lack of feasibility in converting the available information in quantitative terms. Further, the cause effect relationship between different variables responsible for accelerating or decelerating the growth of a particular technology have to be identified to provide feed-back to the control function of the model. For example, if we have to assess the future status of a technology like super-conductivity, we have to identify various variables associated with this technology such as the power to weight ratio of electrical equipment, economic benefits from this technology, space requirements, efficiency of energy conversion, etc. At the same time, its possible application for strategic defence purpose may become one of the variables to retard its growth. In order to develop an accurate model for forecasting future status of this technology, one would have to establish relationships amongst these variables in quantitative terms. The quality of the output of the model and the accuracy of forecasting results would, to large extent, depend upon the correctness of the quantification to develop the model. No doubt, this technique can give very precise results, if correct quantification of all the variables is possible. Hence this technique may be used more effectively after first obtaining the results from the application of other techniques — intuitive and extrapolative.

There are other forecasting methods also viz., simple time series analysis historical analogy, heuristic methods etc. Out of these, "Heuristic Forecasting Models" are application specific and may be developed using a combination of methods both conventional and non-conventional.

8.9 KEY TASKS AND ORGANISATION LINKAGES IN TECHNOLOGY MANAGEMENT

Figure 8.2 gives the role of various actors connected with an organisation like customers, business (marketing) groups, technology management group, corporate headquarters, etc., in

Fig. 8.2 : Technology Management : Key Tasks and Organisational Linkages



the management of technology at an enterprise level. It can be seen from this chart that the technology management group receives necessary inputs for formulation of possible technology options from both the customer end through business groups as well as the corporate agencies. While the inputs from the customer end are in the form of business needs and expectations, the corporate inputs are mainly of policy nature flowing out of the business mission, corporate environment, and the strategies for technology management chosen by the company. Based on these inputs the 'Technology Management Group' formulates possible new technology alternatives, and the "specifications" of the required new technology get firmed up as the first step. Simultaneously the corporate agencies carry out the resource analysis of the company in terms of availability of technological expertise, skills, equipment, etc. and passes on this input to the Technology Management Group. The business group, in turn carries out more precise analysis of customer needs (both current as also emerging) which helps in arriving at desired performance parameters, from the new technology and the time frame by which it has to be made available. Based on these inputs, the technology group carries out an evaluation of available options, viz., technology acquisition or inhouse development for the new technology. If the acquisition is preferred, the next step is to identify prospective collaborators, techno-commercial offers from them, evaluate all offers from different considerations, as explained later in Unit 10, and finally acquire and manage the technology transferred from the collaborators.

If the inhouse development route is selected the entire chain of activity from R&D project formulation to its commercialisation at the market place has to be managed carefully. Funding R&D projects from either corporate resources and/or through external sources including customers is another important activity of inhouse development of technology. Successful management of inhouse development of technology has been described in detail in Unit 9.

This chart clearly brings out that the effective management of technology at an enterprise level calls for close linkages between all the key players involved in the task viz. customers, business or marketing groups and the corporate agencies, apart from the technology management group.

In short, major steps in the management of technology at an organisation level are:

- Identification of technology gaps in existing as well as emerging areas for current and future market needs.
- Evaluating options of inhouse development versus technology acquisition through collaborations.
- Managing the entire chain of events from R&D project formulation to commercialisation in case of inhouse R&D.
- In case of technology acquisition through collaborations, managing the entire technology transactions from prospective collaborators, conclusion of a collaboration agreement, its approval by the Government and managing the technology transfer process.

For effective management of technology at the enterprise level, each of the above steps need to be studied in depth.

8.10 IDENTIFICATION OF TECHNOLOGY GAPS

For technology forecasting, use of **Delphi** technique and other quantitative methods can assist in the identification of emerging technologies and possible know-how gaps. Such an assessment can also be made from following sources:

- Feed-back data on the performance of existing equipment and failure analysis reports;
- Tendering in domestic market where foreign subsidiaries as well as MNCs are competing;
- Tendering in international markets for exports;
- Joint quotations with foreign firms and analysis of specific tenders;
- Feed-back data on basic product parameters vis-a-vis other competitors.
- Technology scanning by product groups;
- Interaction with customers, foreign companies, consultancy organisations, institutions etc.;
- Scanning competitors' activities; and
- Visits to trade fairs, seminars, research institutes, universities, user organisations etc.

Activity 4

Identify, with regard to your own organisation, various groups/agencies, involved in the management of technology and analyse their roles and linkages. Identify the differences between the tasks and roles of the key players as practised in your organisation and those mentioned here and analyse the reasons and effects of the same. Have you any suggestions to offer ?

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8.11 SUMMARY

Technology can be defined as the know-how to transform concepts into goods and services for the satisfaction of the customer. Technology is strategic in the sense, that decisions regarding its choice are difficult to reverse and have far-reaching, long-term implications for a company. Technologies have four distinct phases in their life cycles viz., 'embryonic',

'growth', 'maturity', and 'decline'. Technology is a major stimulus for change and has become synonymous with economic progress. Mankind has made quantum leaps in the living standards, economic levels with the use of technology of some sort which has to be managed, as it is one resource which influences the entire gamut of business management operations. Technology needs of an organisation have to be first assessed over a time span of ten years or so, depending upon the market requirements, both current as well as emerging. The key tasks in planning for technology are the identification of key technologies, crucial to its business operations, assessment of resources required and time span available strong organizational linkages are necessary for successful technology upgradation. Technology forecasting is an important element of technology management. Various techniques, including trend exploration and simulation models, can be used for technology forecasting.

8.12 KEY WORDS

Technology : Means application of knowledge in the form of designs etc. to actual operation of manufacturing/production of goods and articles, etc.

Technology Life Cycles : Different phases in the life of a particular technology.

Technology Acquisition : Acquisition of technology from source external to the firm which might exist within the country or outside, usually the latter.

Indigenous Development of Technology : Generation of (new or improved) technology internally by a company through its own research and development efforts.

Technology Upgradation : Improving the level or quality of technology.

Assimilation/Absorption of Technology : Assimilation of technology means complete absorption of know-how acquired from a collaborator enabling the licencee to put the technology to practical application.

Adaptation of Technology : Technology adaptation involves carrying out required changes/modifications in the designs acquired from collaborators to enable the use of local endowments/indigenous raw materials and purchase items.

8.13 SELF-ASSESSMENT QUESTIONS

1 What is meant by technology ? What is its impact on mankind ?

2 Why should we regard technology as a strategic element and as a strategic resource ?

3 "Just as any product has four distinct phases in its life cycle, so has the technology." What are these four phases ? Explain briefly.

4 "The countries that dominate the global scene are the ones who are technology leaders". Write an essay on this theme on the basis of your knowledge, experience and observation, cite relevant examples.

5 What factors have made the management of technology at enterprise level important? Explain.

6 What are the different routes for a company to becoming technologically rich? Under what conditions different route could be desirable ?

7 What are the essential components of planning for technology ? Explain briefly.

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UNIT 9 INHOUSE DEVELOPMENT OF TECHNOLOGY

Objectives

After reading this you will be able to:

- familiarise yourself with the key issues in management of inhouse development of technology at the enterprise level
- understand the need for integration of R & D strategy with corporate strategy and objectives
- understand the managerial issues involved in successful management of innovation process

Structure

9.1 INTRODUCTION: MANAGING INHOUSE DEVELOPMENT OF TECHNOLOGY

Inhouse generation of technology through R & D is a venture in uncertainty. Successful management of innovation process calls for managing the entire chain of events from idea generation to commercialisation of a new product. An international study by Mansfield and others has brought out that out of 100 R&D ideas conceived for taking up as projects, about 50 failed during the incubation stage and out of the remaining 50 innovations for which technology feasibility reports were prepared, about half failed before project completion. Out of the remaining 25 market ready innovations, about 5 failed in initial market test. The remaining 20 got introduced to the market, but only 10 proved to be financially successful ultimately. Hence, mortality rate of R&D ideas is quite high, but the benefits derived from the few financially successful innovations more than justify R&D costs.

9.2 INTEGRATING R&D INTO CORPORATE STRATEGY

Management of R&D in an industrial enterprise calls for a close linkage between the R&D plans and the business plans of the company. In fact, the R&D plans must flow out of the business strategy.

The principal objective of integrating R&D into corporate strategy is to ensure that the level of deployment of R&D resources are in consonance with the corporation's growth and earning goals and the business objectives of the individual departments. In essence, the process seeks to balance:

- existing business needs with long range corporate goals
- entrepreneurial growth in the younger businesses with disciplined support of the mature businesses, and
- diversification with consolidation and so on.

The essence of integration of R&D strategy with corporate strategy is also to ensure that R&D resources are allocated in relation to business needs/goals in following areas:

- Basic research
- Discovery research
- Development
- Extensions of existing businesses
- Support of existing businesses

This is done for each business centre, each research area and finally for the corporation's entire R&D portfolio. The track record of previous R&D earnings is also considered. For example, to what degree have previous research efforts contributed to current earnings ? Have opportunities for new investment and growth been developed or have the technology areas been so overworked that there is little likelihood of fresh advances ? Such a linkage of R&D strategy with corporate strategy is essential, as technology development can eliminate only technical uncertainties. Commercial risks associated with R&D work have to be tackled by other functions. Hence, development of a new product or system cannot be left to the engineering and R&D function alone. In fact, the production, marketing, finance and corporate planning functions have to carry joint responsibility for introduction of a new product, although the lead for technology development is taken by the head of engineering and R&D function. Many business organisations have come to the conclusion that successful industrial R&D calls for a multi-disciplinary approach in which R&D does not work in isolation, but falls in the mainstream of company operations in close proximity to other functions. It calls for creation of project teams and matrix forms of organisation.

Activity 1

a) Examine the technology development (R&D) projects taken up by your organisation or any other organisation you are familiar with — has any of them failed to yield expected results ? If yes, identify the stage at which they failed and analyse reasons for the same. Were any R&D projects short closed deliberately before they ran through their full normal course ?

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b) Which other functions in the organisation, apart from R&D are involved in developing new products/processes ?

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c) Do you find the present arrangements satisfactory ?

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9.3 FACTORS FOR SUCCESSFUL MANAGEMENT OF INNOVATION PROCESS

The following factors should be taken into consideration if the innovation process is to be successfully managed.

Customer Focus

All R&D projects, which have been taken up either on account of a felt customer need or with the involvement of a customer, have greater chances of commercial success. In fact, the most profitable ideas for innovations, are derived from market needs. Speed of execution of R&D projects is an essential factor for satisfying customer needs and perceptions about product developments.

Climate of Change

Innovation is the job of everybody in the company. An innovative climate calls for motivation and challenge on the part of the employees which alone can foster creativity. Innovation thrives in companies where the desire climate and environment are encouraged and spearheaded by the top management.

Committed Style

All R&D activities commit costs today, in one part of the organisation, with possibilities of benefits to accrue in future in some other part of the organisation. This cannot be effectively carried out unless there is top management commitment to pursue R&D to its logical conclusion and take well calculated risks on account of the very nature of uncertainty of R&D activities. Organisation culture in innovative companies is result-oriented with full realisation of the fact that R&D is an activity which is input deterministic but output probabilistic.

Combined Operations and Structures

As mentioned earlier, effective industrial R&D management calls for multi-functional and multi-disciplinary approach to problem solving. It therefore requires the creation of R&D project teams and matrix form of organisation which do not fall in line with the normal hierarchical patterns. The continuous cross-fertilisation of innovative ideas through different groups/functions in the company is necessary. Large R&D projects are, in fact, implemented by teams functioning as mini company organisations. Thus, combined operations and structures are essential features of industrial R&D management.

Creative and Communication Skills

Management of innovation process requires (i) creative skills in an organisation, removal of mental blocks, rewards for taking risks and facing challenges and (ii) capability to communicate effectively across various functions and disciplines. Rotation of experts from one function to another to improve such skills should be encouraged, which is not feasible without the active support of the top management.

Control Systems

Innovation process by its very nature requires creativity which is anti-control. However, to gain competitive advantage, the R&D projects must be completed (if not killed) within the specified time and cost parameters. This calls for some form of monitoring and control, without losing sight of the fact that excessive control may be counter-productive; it may kill creativity and retard innovation process. Thus, the control systems for management of R&D must be designed with the delicate balance between freedom to innovate and control to reach the market in time.

The key issue for know-how development of technology is that while many companies are successful in developing new products, yet they fail to secure competitive advantage in market due to several reasons:

i) There may be lack of marketing focus in R&D activities

ii) The distribution systems of the company may not be adapted to the level of services required for the new product.

iii) The production systems adapted from previous products may not have been changed, even though the competitive conditions for the new product are different.

iv) There may be inability or lack of willingness to effect the change required for new product introduction within the organisation itself.

v) The strategies in response to change may have been followed piecemeal.

Hence, for successful inhouse R&D, an organisation should not just focus on product development, which may be an R&D activity, but on a cohesive competitive strategy involving other functions like product design, manufacturing, marketing, servicing, finance etc. to build value for R&D costs. All this must also be completed within a specified time frame. In essence, speed is the lever to convert innovation into competitive advantage.

Activity 2

a) What are the main features of the control and monitoring systems for R&D projects in your organisation or any other successful organisation you are familiar with ?

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b) To what extent the above mentioned factors for successful management of innovation process exist in the organisation ? Analyse the relevance of each factor for the specific needs of the organisation ? Have you any suggestions to make ?

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9.4 R&D TIME HORIZONS AND STRATEGIES

For R&D to have any major impact on corporate strategy, the strategy must have a long enough time horizon. The corporate strategy, in turn, implies a set of assumptions about how the company will develop competitive advantage and some of its long-term goals, besides a set of operating principles and values i.e., the culture of the company. Thus, ideas, goals and beliefs help to guide the long-term activities, including R&D.

If a company wants to develop real technical leadership as a basis for competitive advantage, it must have a strategy that reaches out at least ten years ahead. It is a waste of money and opportunities to undertake research with a shorter time frame in mind to hit the market. With a shorter term strategic perspective, it can still be very worthwhile to conduct applied research and development, acquiring the basic technology from foreign collaborators or from universities or from other sources. If the company has a strong market presence or a protected manufacturing position, or is especially fast in product development, this strategy can still work well — despite the lack of technical uniqueness that goes with original developments. As a matter of fact, most new products and processes, even in hi-tech industries, do not depend on the creation of new technologies, but in fact on a new combination or packaging of known technologies. For major competitive advantage, however, most technically oriented companies conduct research in an effort to find those 'other products' that can give strength even to the less unique products in its business portfolio.

This strategy has been successfully pursued by a number of Japanese companies, which have derived competitive strength on the basis of price and quality of their products through flexible and cost effective manufacturing practices. Of late, they are also engaged in a highly competitive level of research and development expenditure, with technological innovation becoming the centre of competitive capability. Leading firms in Japan now spend as much or more on R&D, as do their US counterparts. A few cases are truly startling — both Canon and NEC spend well over 10% of their revenues on research — more than any of the US companies in that field. However, Japanese corporations followed, for a very long time, a

strategy of applied research and development — acquiring the basic technology from abroad, and improving upon it further through inhouse R&D. For instance, during the period from 1951 to 1984, Japanese companies entered into nearly 42,000 collaboration agreements for the import of technology from abroad. These 42,000 contracts represented the best of the technologies available in the world, identified after thorough and painstaking studies by teams of Japanese experts regarding their relative merits and demerits, and the cost to be incurred on competing technologies. This massive transfer of technology from the US and Western Europe, in fact, provided the technological base for nearly all of Japan's modern industries. Without this critical technology transfer, no amount of capital and labour could have moved Japanese companies to their present competitive position so rapidly. Yet, the cumulative cost of all that transfer over a period of more than twenty years, was only $ 17 billion — a fraction of the current annual US R&D expenditure, and even much less than what Japan itself spends on R&D today.

9.5 RESOURCE ANALYSIS FOR R&D STRATEGY AND ITS ELEMENTS

While choosing the R&D path, careful analysis needs to be made of the skills and resources available within a company, technological capabilities existing in the country in related disciplines, time frame required to bridge the technology gap, and R&D costs to be incurred, for producing a marketable product. India's total R&D expenditure is about 1% of its GNP, and was estimated at Rs. 3,500 crores in 1989. Many developed countries spend 2.5%-3% of their GNP on R&D. Even a single company like GE of USA spent Rs. 6,300 crores on inhouse R&D in 1988 which is nearly double that of the R&D expenditure of India. Another dimension is that nearly 70% of the total R&D expenditure in developed countries is incurred in industry, and it is here that technology gets generated. The Indian scenario is different as industry accounts for only 20% of the total R&D expenditure in the country. The rest is accounted by non-industrial organisations and government and autonomous institutions. If we consider that the industrialised or the developed nations have a distinct advantage or superiority over us in the technological arena for various historical reasons, it would be naive to think that in every case Indian companies would be in a position to reach the technological levels of international companies in the foreseable future solely through inhouse or incountry R&D efforts. Even if a company or the country has the intellectual capability to do so in some areas, the massive financial resources required would be beyond our means. Thus, the R&D strategy of companies in developing countries, including India, should be NOT to 're-invent the wheel'. It would be more prudent to use R&D to 'make the wheel run faster' on Indian roads or in Indian conditions through appropriate adaptation and improvement. There is no particular virtue in what is called — the 'NIH Syndrome' — the tendency to reject what is 'Not Invented Here'. These are some policy considerations, which ought to be examined by a company in deciding its corporate strategy, and in choosing an R&D option.

For R&D to have a real impact on corporate strategy, it must have the following essential elements:

- There must be a corporate strategy with sufficient scope and time frame.
- The corporate strategy must be based on sound technological forecasts — anticipating the technical opportunities and threats that will face the company.
- There must be a technical strategy that is realistically linked with the business strategy.
- The top technical person must be a part of the senior management team, preferably on the Board of the company.
- The CEO of the company and profit centre heads must understand and support the innovation process — assuring an atmosphere of entrepreneurship and urgency.
- The top management must continuously provide direction, commitment and support — and a sense of both patience and urgency. It must have a technological vision, understanding of the innovation process and should imbibe confidence in the technical people providing a suitable climate to motivate them.

Unless the above steps are taken at the organisational level, the inhouse R&D efforts would not yield positive results.

A case study on BHEL experience about technology development and how R&D provides the necessary support to assimilate imported technology is given in the Appendix to this Unit.

Activity 3

a) Does your company/organisation commit financial resources for inhouse development of new products/processes ? What is the R&D expenditure of your company as a percentage of sales turnover or gross income ? Do you think it is adequate ? What is the corresponding figure for your next competitor ?

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b) Identify a few new product/technologies developed by your organisation indigenously? Could these new technologies bring in more business or profits for your company ? Were they developed in time as per market requirements ? In case there was a delay in their introduction to market, what was the loss in market share/business to your company and gain to other competitors ? In case your company has not developed any new marketable product/technology, you may analyse the above trends with respect to technologies developed indigenously by any other organisation you are familiar with.

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c) Identify a new product/technology for your organisation, in relation to market requirements. Assess the R&D resource cost in terms of money, skills and time commitments, required for developing the new technology inhouse. Do you feel it would be worthwhile to take up indigenous development of this particular product or buy the technology instead from outside sources ?

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9.6 SUMMARY

Inhouse generation of technology through R&D is a venture in uncertainty. Successful management of innovation process calls for managing the entire chain of events from idea generation to commercialisation of a new product. In order to maximise the success rate the R&D plans must flow out of the organisation's business strategy. Successful management of innovation process is another essential task which gets closely influenced by organisational culture, style, structure, controls systems etc. For successful inhouse R&D, an organisation should focus on a cohesive competitive strategy involving other functions like product design, manufacturing, marketing, servicing, finance etc. For R&D to have a major impact on corporate strategy, the strategy must have a long enough time horizon. While choosing the R&D path, careful analysis need to be made of the skills and resources available within a company, technological capabilities existing in the country in related disciplines, time frame required to bridge the technology gap, and R&D costs to be incurred, for producing a marketable product.

9.7 KEY WORDS

Matrix Organisation : An organisation which combines the features of functional and product divisional forms of organisation.

Interdisciplinary approach : An approach where a group of people drawn from various functions/specialities work on a certain project/new idea.

'NIH Syndrome' : The tendency to reject products/articles not invented within the country through indigenous effort.

9.8 SELF-ASSESSMENT QUESTIONS

1 "Successful management of innovation process calls for managing the entire chain of events form idea generation to commercialisation of new products." What are the event in this chain and how can they be managed successfully ?

2 "R&D must be integrated to the corporate strategy". Explain what could be the consequences if this is not done ?

3 "Control is inimical to innovation which is a creative process" Comment.

4 Why some companies which are successful in developing new products fail to secure competitive advantage in the market?

5 "We need to concentrate more on product development rather than basic research." Give your views.

6 What essential element the R&D effort should have in order to make meaningful impact on the corporate strategy ?

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Appendix

Technology Development — BHEL Experience

Introduction

BHEL manufactures products and systems for the energy, industry and transportation sectors and is one of the very few organisations in the world, which supply such a wide spectrum of products from one source. Technology for design and manufacture of these products requires inputs from a very wide range of engineering disciplines like metallurgy and metrology at one end to aerodynamics, electronics, solar technology etc. at the other. There is hardly any engineering discipline which does not find application in BHEL. Assimilation and further development of such technological skills is, therefore, a difficult and time-consuming process requiring considerable resources. Further, the rate of technological obsolescence for some of the BHEL products is very fast and keeping pace with the international developments in such a high technology area is just not feasible without arrangements for technological inputs from leading companies. For this purpose, BHEL currently has 24 ongoing collaboration agreements with reputed companies of the world.

Beginnings

The first collaboration agreement of what is today BHEL was signed way back in 1955 with Messrs AEI, U.K. (now GEC) for the establishment of the Bhopal Heavy Electrical Plant. This first collaboration agreement required the collaborator to prepare the detailed project report, train Indian engineers, technicians, select machinery and equipment, depute collaborators specialists to India for supervising the erection and commissioning of machine tools and equipment, supply design and manufacturing documentation, components and materials and render assistance to BHEL in establishing the manufacture of different products at the BHEL. Further collaboration agreements were signed by BHEL in the early 60s with Messrs Promashexport of USSR and Messrs Skodaexport of CSSR, for establishment of the Heavy Electrical Equipment Plants at Hardwar and Hyderabad, and Boiler Plant at Tiruchirapalli. All these first generation collaboration agreements were mainly directed towards establishing the manufacture of products as per collaborators designs. These first generation collaboration agreements helped in the development of certain technological expertise within BHEL in the heavy electrical sector. All these agreements have run through the course and BHEL has fully absorbed the technology from these agreements.

Change in Collaboration Content

Over the years, the pattern of assistance sought by BHEL from foreign sources has also undergone a marked change. The present-day collaboration agreements are aimed at obtaining engineering and technological know-how in selective areas for specific products and systems. Import of such know-how is essential, as it is neither economical nor possible to develop such know-how within the time frame required totally through inhouse efforts. In fact, there is nothing like self-sufficiency in technology, which must be distinguished from self-reliance. Large international companies in the line of BHEL business spend huge sums of money on R&D. Siemens spends 8-9% and BBC 10% of their turnover on R&D. American companies like GE and Westinghouse spend 3-4% of their turnover on R&D. Amounts spent by these companies on R&D alone are more than the turnover of BHEL today; BHEL has, therefore, adopted a policy of judicious mix of imported technology and indigenous development. Annex.I gives an overview of technology — absorption process in BHEL over the years, and the stages through which it has passed. Annex.II shows the changing emphasis in the content of collaboration agreements being entered into over the years. These examples illustrate the capability that has got developed within BHEL, as a result of absorption of imported technology.

Choice of Collaborator Options

While analysing the reasons for the choice of collaborator, we must recognise that the two situations viz., presently and in the 50s and 60s, are not the same. Twenty-five years ago we were starting from a scratch. We did not know the art of making heavy electrical equipment and did not understand the finer points of technological options available. So we were virtually dependent on others for whatever they offered to us — whether it was the Design & Manufacturing technology or the type of machine tools to be installed or even the rating of equipment to be manufactured. It was the collaborator, whose views were supreme. Further, not many were willing to assist us in our industrial development. There were also constraints of finance, skills and poor industrial base and we had limited options before us.

Hence, whosoever was willing to assist us in developing our own capability, was chosen as a collaborator. Today, the position has changed radically. Today, we know our needs more precisely and are choosy about the products and technologies that we require. We have also developed skills to negotiate purchase of technology and the experience gained as a result of operation of the collaboration agreements of the first generation has taught us what to look for in a collaborator.

Further, the organisation has also achieved a stature and come to be respected in the community of electrical equipment manufacturers. In the early 70's when BHEL started looking out for a suitable collaborator in the area of boilers and large steam turbine generators, many leading international companies started showing interest in collaborating with BHEL. They had understood that India was a big market and tying up with BHEL for technology would be a beneficial proposition in the long run. However, as many of these companies were making attempts for the first time to collaborate with BHEL, they had some apprehensions and were insisting on certain restrictive clauses, due to which some companies were dropped out. Thus, options available to BHEL for seeking a suitable collaborator had considerably improved by the mid-70s as compared to the early 60s.

Today, due to multiplicity of facts, the position has completely changed. In fact, it has never been so good as it is today. BHEL has acquired a name and large international companies, which were not ready to talk to us 5-10 years ago, are today knocking at our doors to sell their technology in any area we want. The options available before us now are plenty and we can choose precisely the technology and the collaborator that we want and many a times on our terms. Current recession in the world heavy electrical equipment industry has also contributed to this situation of advantage to us.

Terms of Agreement — Options Available

Based on our experience, we are of the view that today we can obtain the right technology available in the world, on the usual terms for foreign collaboration that are available as per our rules. Recent liberalisation in import of technology is also a step in the right direction. We are also today quite free to purchase machinery and equipment required under a collaboration agreement from either indigenous sources or from any other source in the world without any compulsions from the collaborator in this regard.

Know-why Aspects

In the recent collaboration agreements concluded by us, emphasis has been placed on obtaining the know-how and know-why from the collaborators as also on conducting joint R&D projects. Many a time, it is stated that the clauses relating to obtaining know-how and know-why from collaborator are only of an academic nature as many collaborators do not pass on the know-why of technology to us. Some say it is on account of inadequate payments. The question of adequacy of payments for getting the know-why is decided at the time the collaboration is signed. Major point is to classify and clearly identify what constitutes this know-why to be supplied by the collaborator. Once this is done, the collaborator can be pursued to supply these aspects. Wherever details of know-why to be obtained from collaborators are not defined, there might of difficulties. Further, more important than the letter of the agreement is the spirit and the understanding between the two parties. BHEL have been able to obtain necessary know-why from our collaborators in the form of computer programmes, technical reports, results of experimental investigations etc. on request. Similarly, BHEL are doing joint R&D project for development of LP modules of steam turbines with our collaborators. There are other examples of seeking know-why as well as joint R&D working in different product areas with different collaborators. I would, however, concede that initiative in seeking the know-how and know-why from collaborators has to be taken by the licencee himself.

Repetitive Imports of Technology

Repetitive imports of technology for the same product have come in for severe criticism. Inadequate R&D expenditure is attributed as one major reason for repetitive imports of technology. We must understand that transfer of technology is not merely buying of drawings and designs at one go, but of incorporating ongoing developments from time to time. Technology is not a commodity like wheat or rice to remain the same since the dawn of civilization. It is a continuously changing commodity. In fact, this change is accelerating, especially in the high technology fields in which BHEL operates. Those in business world over know that by the time a technical collaboration for a certain product is over, that very technology itself changes. Under these circumstances, it does not seem prudent to bar purchase of new generation of technology imported earlier for a particular product. Japanese

experience confirms this belief. For a very long time, repetitive and multiple purchase of technology was encouraged in Japan. In fact, duplicate imports accounted for most technology imports of Japan in the period 1966 to 1972. By encouraging repetitive technology sales, the Japanese industry got technology at most competitive rates and it also ensured a continual updating of their own capabilities. Repetitive imports formed 36% of the total agreements entered into by Japan in 1963, and became as high as 74% in 1972. It is only now that Japan is not resorting to repetitive imports of technology as earlier. In fact, West Germany and Japan are today world's largest net purchasers of technology. Japan's technological success is mainly attributed to their ability to adapt and improvise the imported technology and improve upon it further. It is here that we need to develop further capabilities to follow Japanese example.

BHEL operates in a high technology area and faces competition from multinational companies, both within India and abroad. Purely from commercial considerations alone, it has to offer contemporary technology at competitive prices to bag orders. For products which have been under manufacture in BHEL for quite some time, we have very selective import of technology. Seventeen collaboration agreements have expired and technology absorbed for the related area. Furher, for new products envisaged in the diversification programme, where there is no technological base within the company as also for products where new developments have taken place at a rapid pace making the older designs uncompetitive, BHEL has to seek collaborations to fill technology gaps. We are also seeking imports of technology under the technical development fund set up by the Government, as also under the regular collaboration arrangements.

R&D Activities, Policies, Programmes etc.

Apart from seeking technology through collaboration agreements, BHEL is also actively engaged in R&D work for assimilation of imported technology and making improvements and modifications in designs, wherever required to suit local needs. We have a Corporate R&D complex at Hyderabad with extensive laboratory facilities and also specialised R&D and product development groups at our manufacturing locations.

BHEL spends nearly 1.8% of its turnover on R&D activities, which is one of the highest in the country . BHEL have specific R&D goals for the company, which aim at absorption and adaptation of imported technology, improvement of product performance and quality, development of new products and processes, particularly in the coal utilisation and NCES areas and basic and applied research in business related disciplines. Generally, 80% of BHEL's R&D resources are directed towards R&D projects which are likely to yield benefits within 5 years and are aimed at enhanced customer satisfaction, cost reduction, import substitution, quality improvement etc. and nearly 20% of the R&D efforts are towards long-term research in functional areas.

We are also participating in the R&D programmes at national level like MHD Project, the CCDP Project and also forming out part of our research work to national laboratories educational institutions etc. It has been our experience that many R&D projects in the past have not seen the light of the day due to lack of demonstration plants for proving the commercial viability of the R&D projects. We have now started giving adequate attention to this aspect and we propose to set up a number of demonstration plants in the next few years funded out of BHEL resources. We are also seeking funding from external sources for some of the demonstration projects which have a wider national application. There is considerably scope for cooperation between our inhouse R&D institutions and Government laboratories/departments.

Some of the major achievements of our R&D are the development of fluidised bed combustion boiler, 18 MW steam turbine for FBTR development of battery powered vehicles, waste heat recovery systems, elimination of oil support in boilers, traction alternators for diesel electric locos, DC auxiliary motor mills etc. Some of the major ongoing R&D projects are combined cycle demonstration plant, cast welded regulators for large size hydro turbines direct ignition of pulverised coal in boilers and the MHD project.

Future areas of thrust are product-oriented developments to suit customer requirements for improved performance, development of integrated rural energy complex using solar, biogas and wind energy and large systems using photovoltaic cells. BHEL are also working in the area of microprocessor controlled systems and line compensation techniques and HVDC.

BHEL's experience proves that R&D activities in a company play a supportive role to upgradation of technology obtained through collaborators and lead to a faster rate of technological development in the company.

Annexure-I

TECHNOLOGY ABSORPTION — WHAT WAS ACHIEVED

Stage-I — Established Manufacturing Plants at Bhopal, Hardwar, Hyderabad & Tiruchi with Turnkey Assistance from Collaborators.

Stage-II
- Acquired expertise in manufacturing know-how
- New Plants were set up with inhouse efforts & limited assistance from Collaborator/Equipment
  - — Tiruchi Phase-II
  - — Transformer Factory
  - — Central Foundry Forge
  - — Seamless Steel Tube Plant

Stage-III
- Strengthened Basic Engineering & Design know-how Capability
- Developed Systems Engineering know-how
- Strengthened R&D Efforts
- Established Capability to offer know-how to others
  BHPV — Industrial Boilers
  IDCOL —Boiler Pipe Fabrication
  MITCO —Mica Paper
- Project Consultancy

Annexure-II

CHANGING EMPHASIS — COLLABORATION CONTENT

1956-67	Today
• Detailed/Project Report	• Manufacturing Documentation
• Plant & Machinery — Selection, Supply & Erection	• Training of Engineers
• Supply of Materials & Components and Establish Manufacture	• Deputation of Exports for Short Term
• Technical Documentation for Product Manufacture	• Engineering & Design Information Including Computer Programmes and Logics
• Training — (Artisans, Supervisors & Engineers)	• Vetting of Our Designs and Information on Improvements and Modifications
• Deputation of Experts for Long Durations.	• Access to their R&D and Joint Developmental Activity.

Annexure-III

TECHNOLOGY TRANSFER

	Time	Emphasis
Phase I	1956-67	• Setting up plants and commencing manufacture (Location-wise multiproduct collaborations from single source)
Phase II	1968-75	• Updating technology in specific areas
		• Strengthening engineering capability
		• (Specific product-wise collaboration with world leaders)
Phase III	1976 onwards	• Acquiring capability to adapt products to suit local conditions
		• Developing Systems Engineering capability in some areas
		• Establishing complementary and basic R&D support
		(Product area wise collaboration with wider technical scope)

UNIT 10 ACQUISITION AND ABSORPTION OF TECHNOLOGY

Objectives

After studying this unit you will be able to understand :

- the role and significance of technology acquisition through collaborations
- the various modes of technology transfer and the involved peculiarities in such transactions
- the various factors that affect the buyer – seller relationship in technology transactions.

Structure

10.1 INTRODUCTION : TECHNOLOGY ACQUISITION

Acquisition of technology from collaborators is a major strategy for bridging the technology gaps in a developing country like India

Having missed the Industrial Revolution of the 18th century, which was really the take-off point in technology race in developed countries, India started its technology race nearly 100 years behind the developed countries, save, in some specific areas. Fortunately, however, during the last 40 years since Independence, this technology gap has been bridged to some extent, due to large-scale import of technology from the the developed countries. Over 13, 000 collaboration agreements have been concluded between Indian and foreign companies since Independence. An analysis of foreign collaborations approved during the last ten years shows that more than 64% of the approvals were from only four countries viz. USA, West Germany, UK and Japan, which proves that they are the major players in the technology market (DGTD data).

Hence, the fastest way to bridge the technological gap is by import of technology through collaborations. In many cases, it would also be cost effective to import / buy technology than develop it through inhouse R&D efforts. It must, however, be borne in mind that collaborations per se are not bad, but dependence on collaborations is bad. Hence, the role of self-reliance in Technology Acquisition should not be lost sight of.

Options for technology acquisition are linked to a large extent on policy environment. Whenever economic policies of the country do not permit the foreign suppliers to freely sell their goods and services in the domestic market, they are more willing to sell technologies for their products. It is because they realise that the only way to enter the domestic market is

through collaboration arrangement and get financial returns by way of payments on account of lumpsum and royalty and by sale of raw materials and components. As most of the technology transactions of the LDC's are held with developed countries, there is considerable difference in the technological capabilities of the buyer and seller of technology, which adversely affects the bargaining power of the buyer organisation in a developing country. Such organisations must learn to successfully negotiate and conclude collaboration agreements on best possible terms.

10.2 BUYER - SELLER RELATIONSHIP IN TECHNOLOGY TRANSACTIONS

Technology transaction is unlike a simple sale of goods or services, which lasts for a short period of time when the goods and their value exchange hands. Technology transactions involve give and take relationships between the seller and buyer of technology, spread over a 5-10 years period or even more.

No standard price exists for a technology package covering the supply of know-how and know-why unlike the case of finished products, say — automobile, tractor, aeroplane, steam turbine etc. Hence, it is extremely difficult to determine the reasonableness of the price for the technology package offered by the foreign collaborator, as there is no reference point. The price levels vary greatly depend upon, not only the quality of technology being offered, but also on the competitive position in market.

As the recipient of technology is not well versed with details of technology being acquired, it is quite difficult for him to specify clearly the scope of know-how or know-why transfer through the aegis of licence agreement. The buyer is dependent to a large extent, on the cooperation and knowledge of the technology supplier. Greater difficulty is experienced in regard to improvements/modification/developments likely to take place in technology being acquired, which are fully unknown today, but have to be negotiated with the technology supplier, and paid for in the licence fees now.

As the technology agreements cover a long period of time, in many cases, persons who negotiated the technology acquisition contracts, may not be in positions both at supplier and buyer's end during the implementation phase of the contracts. Greater clarity in the scope of know-how and know-why transfer, besides the roles and responsibilities of both licensor and licencee are, therefore, essential while finalising collaboration agreements for smooth functioning subsequently.

If future modifications/improvements are to be passed on by the licensor to the licencee during the period of collaboration agreement, specific provisions need to be made in the agreement for this purpose.

The buyer of technology in most of the cases does not have adequate information about the number and quality of alternate suppliers of technology, their track records, financial position at the time of purchase negotiations, their behaviour in similar technology transactions with their clients in other parts of the world etc. All this information is generally kept as a well-guarded secret and its non-availability erodes the bargaining power of the technology buyer. Negotiations for acquisition of technology require multi-disciplinary skills and the technology package has to be examined from various functional angles, viz., design, R&D, production, indigenisation, product performance, marketing, legal, financial, training, government policies etc. No single individual can scrutinise the technology agreements from all these considerations and in many companies, such negotiations are invariably carried out by a multi-disciplinary team with representation from above functions.

As the relationship between the seller and the buyer of technology, is of a long-term nature, it is not feasible to define very clearly in writing all facets of a technology transaction. The spirit behind the collaboration agreement is more important than the letter — as the agreement is only a means for transfer of knowledge and skills from the supplier to the recipient of technology. One must take into account the cultural background, value system, economic level etc. of the country from which technology import is being sought.

As costs of technology generation, especially, in hi-tech areas, are very high, one must examine as to why a collaborator is willing to transfer technology. In some cases, the

collaborator may be looking for a market entry into the recipient country, or for fall out earnings on account of purchase of capital goods, raw materials, components, bought outs/consultancy services etc. There could be various motives on the part of the collaborator to sell his technology and unless these are clearly analysed and understood by the recipient organisation, its bargaining capability would be less. The buyer must also analyse all possible benefits that could accrue to the technology supplier on account of this transaction so that the commercial terms could be negotiated more effectively.

Sellers try to impose numerous restrictive conditions in the agreements governing technology transactions. These relate to purchase of capital goods or components only from/through the seller or restrictions on exports or by way of demanding a minimum quantum of payments etc. irrespective of the volume of production by the buyer. It is extremely difficult to assess the reasonableness of price for a technology package.

All technologies pass through different phases during their life cycles viz., embryonic, growth, maturity and decline phases. Many companies want to transfer technology after the maturity phase, when its prospects have started declining in their own countries. The recipient organisation must assess the stage in the technology life cycle, at which technology acquisition is being negotiated for getting the best possible terms. When the technology is on the decline phase, its costs of acquisition should be quite low, when compared to the growth phase.

In some cases, the parties negotiating for the sale of technology may not be the ones, which are the actual/real owners of that technology, and may be acting on their behalf only. In such cases, these third parties negotiating for technology transactions may not have any direct control or say in the technology transfer process after a certain period of time when things might have changed as the ultimate control vests with the real owner of the technology. It would, therefore, be essential to find out whether the seller of technology is the direct owner or not, so that the client's bargaining position could improve.

Activity 1

a) Identify a couple of technologies acquired by your organisation through collaborative tie-ups.

b) Familiarise, if possible, with the contents of these collaboration agreements and analyse/write down the following details regarding these agreements :

   i) Period of collaboration agreement — basis on which the same was decided.

   ii) The cost of technology transfer in terms of lumpsum and royalty payments. How were these agreed upon? Are the finally agreed costs in terms of lumpsum and royalty rates etc. lower than those proposed originally by the collaborator? If yes, find out if any other prohibitive clauses has been incorporated to compensate for reduced technology fee.

c) Were offers for technology acquisition invited from a number of parties, and was any techno-economic evaluation carried out before agreement on the technology transfer fees'

d) Does the collaboration agreement provide for the transfer of know-how through supply of documentation, training of engineers etc., and the development of know-why capabilities through on-the-job work experience, joint R&D programmes etc.?

e) Whether the agreement provides for continuous flow of information from the collaborator on the modifications, improvements etc. carried out by him at his end for incorporation at the receiving end.

f) Discuss, if possible, with the managers responsible for technology acquisition in you organisation as to which of the aspects mentioned in Section 10.2 had an influence on the technology transaction. Mention any other points relevant by them in this connection.

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10.3 MODES OF TECHNOLOGY TRANSFER

Technology could be acquired in many ways — some common modes of technology transaction are :

1) **The Turnkey approach** in which the technology transaction takes the form of supply of complete factories and industrial plants by a developed country to a developing country. Such a technology transaction involves not only the design and setting up of a complete manufacturing or process plant on a greenfield site in the developing country by a foreign collaborator, but also includes supply of capital plant and equipment, training of engineers, workers and managers of the recipient organisation at the collaborators' works, deputing the collaborators' experts to the recipient organisation for long periods of time for managing the operations of the plant. This form of technology transfer was most common in the 50s and 60s in India.

2) Setting up a **joint venture company** with an Indian party, in which the technology supplier has also a financial stake (upto 40%) as per the existing laws.

3) A full-fledged technology **licensing agreement** between the supplier and recipient of technology, defining the scope of know-how and know-why transfer through supply of technological documentation, training of buyer's experts at collaborator's works etc. through payment of lumpsum and/or royalty. This type of arrangement is the most common mode of technology transfer in vogue today.

4) **Joint bidding** for a specific commercial job on case-to-case basis between the Indian and foreign party if the demand is erratic or some manufacturing facilities or capability already exist in the company or the technology gap is not wide.

5) **One time purchase** of design and manufacturing documentation, technical specifications etc. from the collaborator against a lumpsum payment for updating existing designs etc. This is resorted to when the technological capability in the company is of a high order.

6) **Vetting** by a foreign collaborator of specific new designs developed indigenously against payment of fees. This is resorted to in cases where the indigenous capability is quite well established and vetting by an established foreign organisation is required solely to seek a second expert opinion for satisfying customer needs.

7) **Purchase of a** specific number of **ready-made products** in knocked-down condition with or without the necessary technological documentation and training/visit of the clients' experts at the collaborators' works, when it is considered feasible to design the product indigenously through direct/reverse engineering.

Different combinations of the above variants are possible to effect technology transfer. Having decided a particular form of technology transaction, the next step is to contact the prospective collaborators with a request to send their technical and commercial offers. After receipt of offers from various parties, these have to be evaluated from various techno-economic considerations.

Activity 2

Identify some specific examples of technology transfer arrangements entered into by your organisation (or any other organisation you are familiar with) bearing on the various technology transfer modes mentioned in this section.

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10.4 EVALUATION OF TECHNOLOGY

In any evaluation, it is essential first of all, to consider needs and requirements, and examine how far the technology being offered meets this basic criterion. Subsequently, the

technology offered has to be evaluated with respect to factors relevant to the recipient organisation. Some criteria for evaluating various technologies from both customer's and buyer organisation's points of view are as follows:

a) Technical and commercial evaluation from customer's point of view

The technology offered by the supplier needs to be examined with respect to the following:

- Adaptability and reliability in Indian conditions for operation and maintenance of the licensed product.
- Suitability of indigenous raw materials and other local endowments for the manufacture/operation of the product.
- Major technical features/parameters of the product like efficiency, weights, operational indices like auxiliary power consumption, fuel consumption, etc.
- Performance and reliability indicators of the licensed product.
- Market share of the product in the world — length of experience, number of units sold, hours worked etc.
- Cost when manufactured in India.
- Ease of operation and maintenance with Indian skilled manpower.
- Easy availability of spare parts in the country including standard bought-outs.
- Techno-economics : capital cost, operation cost, say over, a ten-year period, on the basis of certain interest or discount and maintenance cost to assess the capital and operational costs from the customer's viewpoint.

b) Technical and Commercial Evaluation from the buyer organisation's point of view

While all the above factors are relevant even for the buyer organisation, some other factors of direct relevance to the licencee are as follows:

- Ease of adaptability of imported technology into the mainstream of the company with least addition of resources.
- Speed of technology absorption in the company.
- Compatibility with existing technologies in the company.
- Capital investment required for manufacture of the product.
- Technology transfer costs like, lumpsum payment, royalty rates etc.
- Share of business for the company at different stages.
- Speed of indigenisation of the product when manufactured at the licencee's works.
- Pricing of components to be supplied by the licensor during initial stages of technology transfer as per phased manufacturing programme.
- Willingness on the part of licensor to accept different Govt. guidelines for import of technology.
- Willingness on the part of collaborator to share and pass on information in regard to improvements, modifications, etc. of the licensed product throughout the currency of the collaboration agreement.
- Willingness on the part of collaborator to allow access to its R&D facilities, undertake joint R&D projects with the licencee and assist in developing know-why capabilities through on-the-job experience of the licencee's personnel with varying degrees of restrictive clauses even more so, because there is no reference price for a technology package.
- Competitiveness and reputation of the licensor's products in the Indian and world markets.
- Willingness on the part of the collaborator to assist the licencee in attending to site problems, removing generic defects in the equipment and debugging other operational problems.
- Capability for other ranges, types, models etc. not covered by the collaboration agreement.
- Performance guarantee for the product when manufactured at the licencee's works, without any strings.

After evaluating technology proposals of different parties from the above considerations, it is essential to clarify the scope of technology transfer to as great an extent as possible.Some of the means for technology transfer for which specific provisions could be made in the collaboration agreement are as follows:

1) Scope of know-how or know-why transfer to cover supply of design manuals, computer programmes, company standards, product specifications, technical information etc. with as much clarity as possible.
2) Assembly, sub-assembly and component drawings for manufacture.
3) Details of materials specifications, raw materials, components, bought-outs etc. required for production.
4) Manufacturing processes and technology instructions.
5) Quality manuals and systems.
6) Operational and maintenance manuals.
7) Spares recommendations including sources for bought-outs.
8) Quantum of training for licensee personnel in design, manufacture, erection, commissioning, quality control, after-sales-service etc. to be clearly specified in the agreement.
9) Deputation of collaborators experts — charges, duration etc.
10) Quantum of on-the-job experience of the licencee personnel at the licensor's works.

Activity 3

a) Evaluate a few technologies acquired by your organisation through collaborations with respect to the different evaluation criteria, given above, from both buyer's and seller's point of view.

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b) Does the evaluation carried out on the above lines bring out any specific issues regarding the choice of these technologies.

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10.5 TERMS OF PAYMENT

There are specific government guidelines in regard to the quantum of payments to foreign collaborators including the maximum rates of royalty and even the method of calculation of turnover to attract royalty. Government guidelines also exist in other areas like sub-contracting and sub-licensing rights, export rights, patents and brand names etc. These have to be scrupulously followed as the collaboration agreements require government approval. Many procedural steps have to be completed before the actual signing of the collaboration agreement. Some difficulties experienced on account of government procedures are as follows:

Procedural Delays: Government approvals of foreign collaborations takes a long time.

Restriction on Technology Transfer Fees: It is difficult to attract a good collaborator for high technology products due to restrictions imposed by the Government on account of technology transfer fees. Government norms for lumpsum fee or royalty are many a time not accepted by the collaborator. There is a gradual relaxation in the government policy in this regard and recently it has been notified that agreements with no lumpsum payments and royalty rates upto 5% on domestic sales and 8% on exports do not require any Government approval. It is a welcome positive change.

Terms of Payment : In some cases, the collaborators do not agree to the payment of lumpsum fees in three equal instalments, as they feel that they will incur more expenses in the initial period and should be allowed to recover the same at the earliest.

Exports : Permitting an Indian company to export its product to other countries, even excluding countries where the foreign supplier has already a collaborative arrangement may not be acceptable to him as this could have an adverse impact on their export market.

Foreign Technicians : Timely services of foreign technicians may not be availed. This may take place on account of delays in obtaining permission for bringing foreign technicians

to India and for the payments of their fees, for which necessary money transfers have to be made.

The recent liberalisation of policies for foreign investments and collaborations are likely to reduce such irritants. As the restrictions.and procedural requirements are getting gradually relaxed, constraints of the above type may cease to exist with time.

Government guidelines for entrepreneurs in connection with negotiating proposals for foreign collaborations are given in Appendix 1.

10.6 TECHNOLOGY TRANSFER AND ABSORPTION

After the collaboration has been signed and taken on record, it is essential that the licensee should evolve a proper back up organisation, to ensure smooth technology transfer for both design and manufacturing. The R&D set-up should also be activated to support the technology transfer process and develop the know-why capabilities. It is essential to lay more emphasis on both know-how and know-why development, so that self-reliance is acquired at the earliest. It calls for organised efforts with time bound milestones. Immediately after conclusion of the collaboration agreement, a comprehensive technology transfer plan ought to be prepared which should define various milestones for the receipt of technical documentation, training of licensee personnel at the collaborators' works, establishment of any additional manufacturing facilities, production build-up and achievement of indigenisation levels as per the phased manufacturing programme. Some strategies for quick adaptation and absorption of imported technologies are as follows :

1 **Continuous monitoring** of technology transfer plan at the product, divisional and corporate levels.

2 **Buying only a few designs or types** from the collaborator, and developing the rest to cover the entire range, through inhouse development (by direct or reverse engineering).

3 **Training of engineers** in identified areas at the collaborators' works after familiarising them with the documentation received from the collaborators, so that they could derive the maximum benefits from their stay at the collaborator's end.

4 **Analysis of documentation, technical information** etc. received from the collaborators by the R&D groups and preparation of specific developmental plans for import substitution, product improvement, cost reduction, spin off product development, etc. keeping in view the innovations taking place internationally.

5 Entrusting the R&D Group with the responsibility to carry out **product improvement research**, so that the technology acquired is up-scaled and improved upon further.

The above strategies should help the organisation to absorb/adapt imported technology and achieve self-reliance at the earliest, thereby avoiding repetitive imports of technology. Among the public sector enterprises in India, BHEL possesses a quarter of a century of experience in absorption of imported technology from different sources. Some highlights of this experience and the benefits accrued therefrom are given in Appendix 2 to this unit.

10.7 MONITORING THE TECHNOLOGY TRANSFER PROCESS

Nearly 13,000 collaboration agreements have been concluded by Indian organisations since Independence. The role of foreign collaborations in Indian industry has been very prominent, both in private as well as public sectors. More than 75% of electronic items, 70% of agricultural machinery, 65% of transport machinery and 35% of all drugs made in the country, are products of foreign collaboration. Almost 100% of power plants and allied equipment used for generation, transmission, distribution and utilisation of electrical energy are manufactured in the country to designs imported originally through foreign collaborations. However, many of these collaborations have been extended time and again, and nearly 20% of the above collaborations have been renewed on the average six times or

more. Although the country has derived immense benefits from these inputs of foreign technology, it is obvious that the overall technological capability of the country as well as of the recipient organisations would have been much stronger, had there been a more systematic effort at absorption, adaptation and upgradation of imported know-how over years[1].

It is obvious that the status of absorption of technology acquired through collaborations, has to be systematically monitored. As mentioned earlier, technology transfer is in essence, transfer of knowledge and information from the licensor to the licencee personnel through various modes like : technological documentation, training and on-the-job experience for specific projects at the licensor's works, deputation of foreign experts to the licencee's works to offer consultancy, supervision and trouble-shooting assistance etc. It is, therefore, not feasible to evolve any quantitative techniques for monitoring the technology absorption process. Evaluation of technology absorption benefits is generally of a qualitative nature, and cannot be quantified in real terms. It is, no doubt, essential that the 'technology transfer process' is monitored as per a well laid-out technology transfer plan, formulated soon after the finalisation of collaboration agreement. The technology transfer monitoring should be carried out periodically and should be the direct responsibility of the concerned product head. The corporate management should call for periodic reports on the status of technology transfer/absorption from the product heads and these should be analysed and reported to the Director Incharge of technology in the company for possible course corrections. On the basis of experience gained over the years, a suitable format for monitoring the technology transfer process has been evolved for a manufacturing organisation supplying a number of products to meet the collaborators' design demands. A copy of this format is presented in Appendix 3. It would be seen that this format provides for evaluation of technology absorption status in various areas (actual versus plan) like training, documentation, facilities build-up, indigenisation achieved and evaluation of know-how and know-why benefits as per a questionnaire. This format has been used by a leading engineering firm of the country for this purpose.[2]

Monitoring of technology transfer process is still considered to be a weak link in the whole gamut of technology transactions undertaken by different companies.

10.8 MAXIMISING TECHNOLOGY TRANSFER BENEFITS

While monitoring of technology transfer plans is essential to keep a track of the technology absorption status, it is also helpful to evaluate the benefits derived from absorption of imported technology. This might also indicate the extent to which technology has been absorbed. Some of the ways by which maximum benefits could be derived from technology transfer are listed below :

1 Ability to trouble shoot, solve generic problems, overcome product deficiencies by inhouse efforts.

2 Ability to design and develop variants, upgrade the product or system to suit the changed operational requirement.

3 Assimilation, adaptation of computer programme for basic design.

4 Inhouse development of design of components and sub-systems for which detailed drawings have not been supplied by the collaborator.

5 Assimilation and adoption of quality control procedures for manufacture at works, bought-out items for erection and commissioning.

6 Ability to undertake connected R&D activity of the products/systems developed.

7 Extent of absorption of basic know-how and know-why.

8 Ability to bridge the gap between the technology recipient and world leaders over the next five to ten year period, without taking recourse to technology imports.

9 Evaluation of competitive position in the particular area in both India and the world.

10 Confidence level in the company for handling the product independently after expiry of the collaboration agreement.

Various strategies mentioned above are expected to accelerate the process of technology transfer, absorption and adaptation for deriving maximum benefits from the collaboration agreement. It must, however, be noted that technology transfer is in essence a process of transfer of technological expertise from the collaborators' specialists to the engineers of the recipient organisation. Successful execution of this process involves not only commercial and technological considerations but also human dimensions. Many a time, there are obstacles to smooth transfer of technology on account of commercial and organisational factors like :

1) Attitude of the licensor to get maximum returns with minimum efforts, thereby depriving the licensee of the core know-how and know-why.
2) Licensor insisting through guarantee obligations for purchase of hardware, services, etc. from him or from specified sources, without which he would not stand guarantee for the quality of the manufactured product.
3) Licensor influencing financial institutions, major customers in the country to get a good share of business by insisting on the licensee for purchase of a minimum quantum of components for giving back-up performance guarantee.
4) Different languages used at the licensor and licensee's works.
5) Communication problems at various levels where organisations are large and the products are manufactured at more than one location.
6) Data on performance of similar equipment supplied by licensor to other countries, and the modifications etc. carried out thereon not being communicated to the licencee, thereby leading to irritants.
7) Original estimates of financial returns to the collaborator on account of royalty payments getting adversely affected due to major changes in demand pattern with respect to projections made at the time of signing of the agreement, leading to irritants.

There can be many more reasons for irritants between the licensor and the licensee coming in the way of smooth technology transfer. It is here that the role of licensor and licencee becomes very important.

Activity 4

a) Does there exist a mechanism in your organisation (or any other organisation you are familiar with) to monitor the technology transfer process and evaluate the extent of technology absorption? How often does the top management undertake review of technology absorption benefits through collaborators. Are any corrective steps taken as a result of these reviews, to derive greater benefit from collaborations?

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b) Identify a few specific technology transfer benefits that were expected to accrue as a result of acquisition of a particular technology in your organisation? How well the benefits actually derived by the organisation through technology acquisition compare with those envisaged at the time of collaboration. You may undertake this analysis for a few products/technologies in respect of your organisation or any other organisation you are familiar with.

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10.9 ROLE OF LICENSOR AND LICENCEE

It is not enough to choose a right technology or a collaborating partner, but it is even more important to see that the collaboration works. For a successful collaboration agreement, both

licensor and licencee must clearly understand their roles and responsibilities. Undoubtedly, the most important ingredient in the whole process is mutual trust, based on which good working relations can be developed between the two parties at all levels. The availability of good engineering expertise with the licencee to define as clearly as possible, the scope of know-how and know-why transfer at the time of signing of a collaboration agreement can help a great deal. R&D groups should be associated with negotiations with the parties.

Another important way is regular communication channel between the two parties at different levels, which can be structured through annual or bi-annual reviews and frequent feedback to the licensor from the licencee on market situation and in regard to the performance of product. Prompt payment to licensor, annual licensor-licencee-customer seminars for product related issues and new developments and identification of a suitable organisation at both ends to coordinate the technology transfer relationships at all levels, would go a long way in streamlining the technology transfer process.

10.10 SUMMARY

Acquisition of technology from collaborators is a major strategy on bridging the technology gaps quickly in a developing country like India. In many cases, it would also be cost effective to import/buy technology than develop it through inhouse R&D efforts. However, the importance of self-reliance in technology acquisition should not be lost sight of. For successful transaction of technology a sound buyer-seller relationship is necessary. Depending on the buyer's strengths and his operating environment, most suitable modes of technology transactions are to be chosen. Evaluation of technology to be acquired is another critical aspect involving market aspirations, and other factors relevant to the recipient organisation. After evaluation of technology, scope of technology transfer, as also the terms of payment to the collaborator need by framed, keeping in view various important organisational and market related aspects. It is essential that the licensee should evolve a proper back-up organisation, to ensure smooth technology transfer. The R&D set-up should also be activated to support the technology transfer process and develop the know-why and know-how capabilities, so that self-reliance is acquired at the earliest. Various strategies may be adopted to gauge the benefits derived from absorption of imported technology, as also to accelerate the process of technology transfer, absorption and adaptation. For a successful collaboration agreement, both licensor and licencee must also clearly understand their roles and responsibilities.

10.11 KEY WORDS

Turnkey Approach : The setting up of complete works (factory) — installation or erection of plant, machinery and equipment, including civil construction — at the site of the technology transferee.

Joint Venture Company : Setting up of a company in the country of the technology transferee in which both transferor and the transferee participate in the equity, within the framework of laws.

Licensing Agreement : An agreement entered into between the transferor and recipient of technology which stipulates all the terms including the various facilities to be provided by the licencee.

Engineering : Engineering encompasses the entire chain of activities from conceptual design through detailed drawings to the preparation of manufacturing drawings, which enables the manufacture of a product.

Reverse Engineering : Reverse Engineering means dissection of an already existing finished product and preparation of manufacturing designs with a view to improve the product.

10.12 SELF-ASSESSMENT QUESTIONS

1 Why technology acquisition is important for developing or less developed countries?

What impact a liberal policy on acquisition of imported technology could have on the indigenous development of technology?

2 In what ways is a transaction involving transfer of technology different from an ordinary buy or sell transaction? What are the implications of such differences, if any?

3 "Often the developed countries like to enter into a technology transfer agreement when their technologies have reached either maturity or decline phase." Do you agree with the statement? Discuss in detail and cite some examples you might be aware of.

4 What are the different modes of technology transfer? Is any one mode the best? Is there any policy of the Government of India on technology transfer? Discuss.

5 It has been stated that evaluation of technology before its acquisition is crucial to the task. What factors you would take into consideration before acquiring any particular technology?

6 What are some of the procedural difficulties expressed by industrialists in India for entering into collaboration agreements perceived by them to be highly profitable?

7 What measures at enterprise level are necessary for successful absorption of technology by the recipient?

8 How could the benefits emanating from technology transfer be maximised?

9 Write a critical essay on the present technology scenario in India and offer some useful suggestions.

10.13 FURTHER READINGS

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1 Patil, Surendra J., March 4, 1989, *Main Elements in Shaping Future Technology Policy of India*, Economic and Political Weekly, pp.463-466.

2 Ibid.

Appendix 1

GOVERNMENT GUIDELINES FOR ENTREPRENEURS ON FOREIGN COLLABORATIONS

The following are the guidelines which the entrepreneurs are required to take note of in negotiating proposals for foreign collaboration so as to ensure that such proposals conform to the policies of Government:

i) They should, to the fullest extent possible, explore alternative sources of technology, evaluate them from a techno-economic point of view and furnish the reasons for preferring the particular technology and the source of imports;

ii) The Indian party should be free to sub-licence the technical know-how/product design/engineering design under the agreement to another Indian party on terms to be mutually agreed to by all the parties concerned including the foreign collaborator and subject to the approval of the Government.

iii) The royalty wherever allowed will be calculated on the basis of the net ex-factory sale price on the product exclusive of excise duties, minus the cost of the imported components, irrespective of the source of procurement including ocean freight, insurance, custom duties etc. The payment of royalty at the rate mentioned above will be restricted to annual licensed/registered capacity plus 25% in excess thereof. In case of production in excess of this quantum, prior approval of Government would have to be obtained regarding the terms of payments of royalty in respect of such excess production;

iv) There should be no requirement for the payment of a minimum guaranteed royalty regardless of the quantum and value of production;

v) Arrangement of clauses which in any manner bind the Indian party with regard to the procurement of capital goods, components, spares, raw materials, pricing policy, selling arrangements, etc. should be avoided;

vi) To the fullest extent possible, there should be no restrictions on free export to all countries;

vii) The use of foreign brand names will not be permitted for internal sales.

viii) Government do not favour requests for extension to the duration of collaboration agreements. All efforts, should, therefore, be made by Indian party to assimilate the technology within the initial duration of the agreement.

ix) Suitable provision should be made for the training of Indians in the fields of production and management. There should also be adequate arrangements for Research & Development (R & D) engineering design, training of technological personnel and other measures for the absorption, adaptation and development of the imported technology. Such measures can be undertaken through in-house facilities of the entrepreneur or in collaboration with recognised engineering design, consultancy, R&D organisations in the public or private sectors and recognised scientific and educational institutions, where the necessary facilities exist;

x) Consultancy services required to execute the project should be obtained from Indian consultancy firms. If foreign consultancy is also considered necessary, an Indian consultancy firm should be the prime consultant;

xi) If the proposed item of manufacture is covered by a patent in India, it should be ensured that the payment of royalty lumpsum payment for the duration of the agreement would also constitute compensation for the use of patent rights till the expiry of the life of the patent and that the Indian party would have the freedom to produce the item, even after the expiry of the collaboration agreement without any additional payments;

xii) Collaboration agreement will be subject to Indian laws.

Source : Government Guideline on Industrial Policies and Procedures — Part I, Chapter IV (Extracts)

Appendix 2

Technology Absorption in BHEL — an Overview

Introduction

Technology is a major element in Corporate strategy. For a Corporation like BHEL operating in a high technology area characterised by continuous product innovations; large spending on R&D; and stiff global competition; technology management acquires added dimension.

World over it is recognised that technology needs of any large corporation even in developed countries cannot be solely met through its own engineering and R&D efforts and most companies project the "technology requirements" to the make-or-buy decision. BHEL has also adopted a technology policy which aims at developing long-term technological self-reliance by adopting a judicious mix of indigenous and imported technology. Thus, apart from inhouse R&D efforts, BHEL imports technology from leaders world over after a proper evaluation of the best sources of technology and a techno-economic examination of the various technology options available.

In line with this approach, BHEL currently has 24 on-going collaboration agreements with reputed companies from all over the world. Absorption of imported technology receives high priority in the company, as faster absorption of imported technology leads to strengthening of the technological base of the company; gives rise to other spin off benefits like faster development of new products and processes with indigenous efforts. BHEL, possesses, today a quarter century of rich experience in the absorption of imported technology from different sources all over the world. Some highlights of this experience and the benefits accrued there from are given in succeeding paragraphs.

The Beginnings

Over quarter of a century ago the first collaboration agreement was signed between the Bhopal plant of BHEL and AEI Limited, UK, for setting up of the first heavy electrical equipment plant in the country. Subsequently more plants were set up during the early 60's at Hardwar, Hyderabad and Tiruchi under technical collaborations from M/s. Prommash-export, USSR and Skoda-export of Czechoslovakia. If the content of these first few collaboration agreements signed by BHEL over two decades ago, is compared with the content of collaboration agreements being entered into in selective areas by BHEL now, the difference itself would highlight the "Technology Absorption Process" in BHEL over the years. Exhibit-I gives this comparison pictorially and it is obvious that insofar as the technology for preparation of detailed project reports, selecting, ordering and erecting the plant, machinery and equipment, deciding the factory lay outs and blocks, establishing the manufacture of new products, etc. is concerned, BHEL is today fully self-sufficient and does not require any foreign assistance worthy of mention. The result is that the new plants/projects of BHEL at greenfields sites as well as extensions in the existing plants have been designed and implemented by BHEL solely through in-house efforts. CFFP, Hardwar; Transformer Factory, Jhansi; SSTP, Tiruchi; Boiler Auxiliaries Plant, Ranipet; HTCIP, Jagdishpur; Component Fabrication Plant, Rudrapur; Phase III expansion of boilers plant at Tiruchi; LSTG Project at Hardwar are some examples of this kind.

Absorption of Manufacturing Technology

BHEL can legitimately claim a very fast rate of absorption in so far as manufacturing technology acquisition from collaborators is concerned. In fact this is one aspect which is monitored at various levels, as fast absorption of manufacturing technology leads to reduced import content, lesser costs of manufacture and enhanced competitiveness. For example, the first 210 MW steam turbine of KWU design had an import content of around 90% which went down to 24% in the 6th set manufactured within two years and would progressively get reduced to just 11% in the 22nd set of KWU design turbine to be manufactured within the next two years. If one excludes 11% of imports necessitated due to C&I package, KWU type steam turbine would become 100% indigenous, by the 22nd set which is within a span of just 4-5 years. Similarly the 500 MW steam turbine of KWU design which had an import content of around 100% in the first set during the year 1983-84 would progressively get indigenised and have an import content of just 12% in the 9th set to be manufactured in 1987-88. Exhibit-II graphically bring out the progressive indigenisation of the 500 MW TG sets.

Similar examples can be given respect of other products like boilers, compressors, industrial drive turbines, motors, switchgear, etc., to illustrate the point that the rate of manufacturing technology absorption in BHEL is quite high.

In many cases the import content alone does not reflect a correct picture of the status of absorption of manufacturing technology. Quite often, specially in tenders with World Bank Financing, the customers insist on a backup guarantee from the collaborator which necessitates a minimum percentage of import of components from the collaborators leading to higher overall import content, which is not indicative of the status of indigenisation possible with the skills developed.

Absorption of Engineering Know-how and Know-why from Collaborator

The first generation of collaboration agreements entered into by BHEL till mid 70s had laid greater emphasis on obtaining such design information and

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Case written by Dr. R.K.D. Shah, Executive Director, BHEL. Used with the permission of the author.

technology as would enable manufacture of products, make design modifications to suit Indian requirements and answer customer queries. However, even these collaboration agreements strengthened the engineering capability of the company and led to initiation of work on new products/processes. Compared to this, the collaboration agreements entered into more recently lay greater emphasis on obtaining of engineering know-how and know-why; access to R&D; and joint developments. The purpose in seeking this engineering know-how is not with a view to "Re-invent the Wheel" but to develop engineering capability to evolve new models, variants etc., necessitated by customer and local requirements, availability of indigenous raw materials, and also to undertake futuristic product developments on our own.

The technology policy adopted by BHEL has laid guidelines to substantially complement, adapt and improvise imported technology through inhouse R&D efforts. The absorption of imported technology can be further stimulated by indigenous R&D efforts, to develop products in ranges and sizes not covered by collaboration and also develop new products/ processes from the same family. By this approach, BHEL have been successful in commercialising a number of new products/systems. Some of these are:

i) Fluidised bed combustion boilers,
ii) Static Compensation Systems for transmission lines,
iii) Waste Heat Boilers,
iv) PV applications for Water Pumping; Railway Signalling; Street Lighting; TV, etc.
v) Auto Slow Down Devices for steel mills,
vi) 3.3/6.6 kV Vacuum Contractors,
vii) Bagasse fired FCB Boilers & co-generation plants for sugar industry etc.

Some successful R&D achievements include :

i) World's first tandem control of hydro power station at Chibro and Khodri,
ii) Largest 400 kV class auto transformers,
iii) 315 MVA 3 phase complete alternator rectifier,
iv) Traction Alternator Rectifier system for 2600/2400 HP diesel locomotives, shunters etc.

Above example illustrate the point that absorption of imported technology specially in the engineering areas can be stimulated to a great extent by inhouse R&D efforts. BHEL, therefore, spends nearly 1.7 per cent of its turnover annually on R&D which is one of the highest in the country. BHEL alongwith a number of organisations also participates in National & International R&D programmes like MHD; National HVDC project; Indo-German and Indo-US research programmes; etc. Thus both inhouse R&D developments and import of technology have become complementary and supportive to each other.

Strategies for Absorption of Imported Technology

BHEL has adopted following strategies for adaptation and absorption of imported technologies:

i) A technology transfer plan is prepared as soon as a collaboration agreement is signed and this is monitored continuously for effective follow up.
ii) The agreement covers only few designs and models and remaining designs to cover the entire range are developed through inhouse R&D efforts (by direct or reverse engineering).
iii) BHEL engineers are trained on identified areas, after familiarising them with documents, reports, computer programmes, etc., received from collaborators.
iv) Documentation received from collaborators is analysed by engineering and R&D Groups & development works are planned for import substitution, product improvement, cost reduction, new product development; keeping in view the developments taking place internationally.

All the above steps are directed to faster absorption of imported technology with a view to achieve ultimate self-reliance in technology.

Mechanism for Monitoring the Absorption of Imported Technology

The status of technology transfer in respect of major collaboration agreements is regularly, monitored at the following levels:

i) At the level of EDM/Product-Manager who has the prime responsibility for smooth technology transfer and absorption of imported technology,
ii) At the level of Product Committee, Technical Committee,
iii) At the level of Engineering Committee.
iv) Periodic reporting to the Management Committee and Board of Directors,
v) Periodic joint reviews with the collaborators e.g. CE/BHEL review of boilers: BHEL Siemens for SF6 and Motors, etc.
vi) Continuous inter-action with customers through seminars, technical symposia, workshops, etc.

Suggestions for Accelerating the Pace of Technology Absorption & Indigenous Developments

i) As a result of technology absorption and indigenous development, it has been possible to develop a number of new products and systems for indigenous requirements. However, to prove the performance of the new products/ systems and to built customers confidence in the new products, it is essential to set up demonstration plants where these products/systems can be operated in actual working conditions. Setting up of demonstration plants is, however, both a time-consuming as well as capital intensive operation. BHEL has worked out a list of such demonstration plants and solicited funding for the same from the Government. In fact, 9 proposals for demonstration plants valued at Rs. 58.2 crores pertaining to the power sector are pending approval of the Government.

Government assistance for funding of such demonstration projects would go a long way in faster absorption of imported technologies leading to indigenous developments of new products and processes.

ii) In areas where indigenous technology is already well developed and further improvements in technology can be sustained by virtue of local R&D efforts, import of technology should not be allowed. In fact, there could be phases of induction of imported technology followed by closure of technology import for some period of time to enable the indigenous technology to develop and flourish on its own. After a certain gap of time technology imports in that particular area could again be permitted which would then help in further blossoming of indigenous technology. This approach was very successfully followed in Japan.

Conclusion

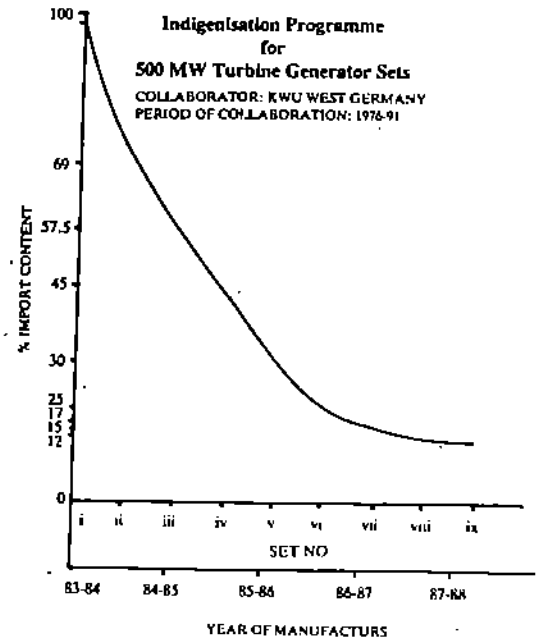
It would be seen from the above that absorption/ adaptation of imported technology cannot be viewed in isolation. Speedier absorption of imported technology must lead to development of new products/technologies in the allied area by virtue of the knowledge acquired through technology import. Funding of demonstration plants by the Government/ major customers and stoppage of technology import for some time in selected areas would go a long way in achieving this objective.

Exhibit-I

Changing Emphasis — Collaborations

1956-57	Today
• Detailed Project Report • Plant & Machinery — Selection, Supply & Erection • Supply of Material & Components and Establish Manufacture • Technical Documentation for Product Manufacture • Training — (Artisans, Supervisors & Engineers) • Deputation of Experts for Long Durations	* * * • Manufacturing Documentation • Training of Engineers • Deputation of Experts for Short Term • Engineering & Design Information Including Computer Programmes and Logics • Vetting of our Designs and Information on Improvements & Modifications • Access to Their R&D and Joint Developmental Activity

Exhibit II



Appendix 3

FORMAT ON TECHNOLOGY TRANSFER MONITORING

1 RESPONSIBILITY

The Chairman of the Product Committee to review this quarterly status report and send it to Director (Tech) for information of Corporate Management.

2 BASIS

i) Technology transfer plan for the Product is to be prepared.
ii) Milestone activities to be monitored.

3 FORMAT

i) Name of Product/System:
ii) Range covered:
iii) Name of the Collaborator:
iv) Collaboration period From To:

4 STATUS IN VARIOUS AREAS

I **Training :** Total agree Man-days/man-months. Utilisation till date:

a) Design:
b) Technology/manufacture:
c) Quality:
d) Erection and Commissioning:
e) Any other area:

II **Documentation :** Agreed Nos./Quantity to be supplied:
Actual released for manufacture/field work:

a) Design:
b) Manufacturing technology and Processes:
c) Quality:
d) Erection & Commissioning:
e) Operation and Maintenance:
f) Others:

III **Facilities:**

Proposed:
Commissioned as on date:

IV **Indigenisation Plan (Components & Sub-Assemblies) Yearwise Achievements:**

Proposed :
Actual:

V **Indigenisation Plan (Raw-Materials)**

Yearwise Achievements:
Proposed :
Actual:

VI **Present Positioning of Trained Executives:**

VII **Evaluation of the Benefits from the Collaboration:**

Scale : (Min.) (Max.)
0 _____ 10

		Enter scale value
1	Ability to trouble shoot, solve problems/overcome deficiencies by ourselves	( )
2	Ability to design and develop variants/upgrade the product or the system	( )
3	Assimilation and adoption of computer programmes for basic design	( )
	Design of components and sub-systems	( )
4	Assimilation and adoption of quality control procedures in :	( )
	Manufacture at our Works	( )
	Bought-out items	( )

Erection & commissioning ( )

5 Ability to undertake connected R&D for spin-off products/systems development ( )

6 Absorption of basic know-how ( )
Know-why ( )

7 Ability to bridge the technology gap in the respective areas between ourselves and leaders abroad in the next 5 - 10 years by ourselves ( )

8 Comparison of our market competence in India ( )

9 Comparison of our market competence in World market ( )

10 Confidence level in handling the product/system independently after the expiry of the collaboration agreement ( )

VIII Any Specific Point(s) as Applicable to the Product System:

Remarks: Problems faced in indigenisation of design/manufacture in BHEL/India, and indigenisation of raw materials.

Note : Give specific examples/cases to illustrate views expressed vide Points 1 to 7 above.

Uttar Pradesh
Rajarshi Tandon Open University

MBA-4.3 4.3

Strategic Management

Block

4

STRATEGY AND SOCIAL RESPONSIBILITY

BLOCK 4 STRAGEGY AND SOCIAL RESPONSIBILITY

Though the fundamental purpose of business is to produce and distribute goods and services in such a manner that income exceed costs, society expects that business is conducted in a socially responsible manner. Growth is necessary for economic well being of a society, yet if it fractures ecological integrity and wastes increasingly valuable energy, such growth is questionable.

Social responsibility embraces multitude of internal and external relationships of the firm. Business enterprises, conscious of their social responsibility, would seek to comply with the laws concerned with employment of women, non-discrimination in employment, ecological effects of production, consumers, and employee welfare, and in general they would think of the impact their action on the community.

Social and ethical aspects of business impinge upon the choice of strategy. How societal values and expectations affect business and how a firm perceives its social and ethical obligations are interactive in character and both of these may become constraints in strategy formation. That how consumerism, occupational health and safety, product safety, concern for environmental protection, nutritional issues, beliefs about ethics and morals and other similar societal based factors impact upon the strategies of the organisation do not need much discussion. The organisational strategies have to accommodate these factors. Some instances can be cited. Cigarette manufacturers have reduced the tar and nicotine content of cigarettes. Food processors have altered the use of preservatives in food products and have begun to promote nutritional content and "natural" flavours. The lending institutions have given up their overly concern with safety or security of money advanced and are now more concentrating on the competence of the entrepreneur and commercial viability of the project. All these instances demonstrate how business has adapted itself to changing social values and expectations.

From the strategic point of views, the societal changes and expectations can be viewed both as constraints and as threats. Generally, the societal changes and changes in life style preferences would be viewed as threats. However, it should be pointed out that what is perceived as threatening by one organisation may be perceived as an opportunity by another organisation. For instance, while public concern about cancer-causing food additives may be strategically perceived as threatening by a food manufacturer, the same may be perceived as an opportunity by other organisations which have expertise in health and nutritional research and safe foods. This may be seen by the latter organisations as opening new doors. The concern for conservation of traditional energy sources has provided an opportunity to several manufacturers for developing renewable sources of energy and energy efficient devices. Needless to say, a firm has to be alert to the broad societal changes. Only then will it be able to convert what might temporarily appear to be a threat into an opportunity.

Running the enterprise in a "socially responsible" manner implies that the activities of the organisation are in tune with what is generally perceived as in the public interest. It also implies that the firm responds positively to emerging societal priorities and balances the interests of its various stakeholders. Further, it realises the importance of being "good citizen" in the community and makes social and ethical obligations an explicit and high-priority consideration in conducting its affairs.

Being "socially responsible" has a positive appeal. The organisation improves its standing in the public which has the effect of enhancing its own performance opportunities. If the firms ignore the changing priorities and expectations of society, the result could be greater public criticism and more onerous regulation by government.

Concern for social responsibility has led to the development of (more or less) formal procedures to monitor corporate compliance with changing social demands. One such procedure is "social audit". It is also common knowledge these days that business has attempted through advertising and public relations activity to explain and accentuate its consistency with various social objectives. Recognition of the need for social responsibility has also led several large enterprises to make intentional efforts to increase their sensitivity towards current and future pressures for changes in social expectations.

Social Responsibility is then the subject of block 4. This block has two units.

Unit 11 is a case study *The Case of Dying Fish.* This time we are making a departure from our usual practice but it is not without good reasons. Normally, we expect our students to first go through the conceptual material and then analyse the case. But this time we thought we should ask you to first go through the case and analyse it : identify and delineate the issues, develop clarity about various dimensions of the problem, study the environment, behaviour and interests of various groups/stakeholders involved, and think of alternative approaches to solving the problem. In analysing this case you will be confronting several interesting ethical, moral and social issues. By the time you have analysed the case, you may be receiving the unit on social responsibility. We would ask you to read the unit and analyse the case again and then find for yourself how it has affected your analysis. What new ideas, clues and new ways of looking at the problem the reading of the unit has provided you. We think this should be an interesting new experience.

Unit 12 deals with *Social Audit* which is a tool for evaluating, verifying and reporting the performance of the firm in the sphere of social responsibility. It will help a "socially conscious organisation" to bring about greater strategic articulation and desirable modifications in its social policies and programmes. In this unit the term social audit is defined and the desirability of undertaking social audit by a business enterprise is discussed. The various frameworks or methodologies for conducting social audit are explained. The potential difficulties that could be faced by an organisation adopting social audit are discussed and critically evaluated. The status and the state of art of social audit in relation to India is examined and analysed. Finally, what looks like the future of social audit is explored.

UNIT 11 SOCIAL RESPONSIBILITY : THE CASE OF THE DYING FISH

Zuari, designed, engineered, and constructed by one of the most experienced engineering organizations in the world, and employing the most modern technology for producing chemical fertilizers, faced a threat immediately after a few months of its operations when the effluents discharged by the plant polluted water and paddy fields in the surrounding areas.

The Birla Gwalior Private Limited was granted an industrial licence on December 12, 1966, by the Government of India for establishing the Zuari Agro Chemicals Limited in Goa to manufacture chemical fertilizers. With the assistance of the Government of Goa a suitable site of 550 hectares, about 10 kilometres from the harbour at Sancoale near Dabolin, was selected for locating the plant. Sancoale was one of the locations set aside by the Government of Goa for development of industries.

The Indian Oil Corporation agreed to supply the factory's full requirement of 2,00,000 tonnes per annum of naptha (a major raw material) from their proposed main installation at Marmagao and to make its facilities at Marmagao available to Zuari for imports in the event of any shortage of this raw material. The Ministry of Petroleum and Chemicals also agreed to allow the company to import its total requirements of another raw material, phosphoric acid.[1]

The company expected to market its products in Maharashtra, Mysore, and Western Andhra Pradesh. In 1968-69, Andhra Pradesh, Maharashtra, and Mysore were the first, second, and fifth largest consuming states in India, respectively, of chemical fertilizers. The location of the plant had good railway and highway facilities to move fertilizer products from the factory into the marketing area. The location had a natural freight cost advantage in servicing the above high consuming areas.

Zuari entered into collaboration with the United States Steel Corporation in November 1968 for capital participation (37,72,500 equity shares of Rs. 10 each), know-how, and technical personnel and services. According to the company sources:

> United States Steel Corporation is the tenth largest industrial concern in the United States in terms of turnover and the world's largest steel producer, ... (and) one of the largest producer and marketers of fertilizers, fertilizer material and agricultural chemicals in the United States of America, having acquired more than 70 year's experience in all phases of fertilizer activities.
>
> ..... United States Steel Corporation's total installed nitrogen capacity is well over half a million short tons per year, placing it third among all U.S. Nitrogen producers.
>
> ..... United States Steel Corporation is also a major American phosphate producer (over 3 million short tonnes) ..... In its chemical fertilizer plants, facilities are installed to produce 4,500 short tons per day of granular and mixed fertilizers .....[2]

According to the agreement, the USSC was to give technical information on manufacture of ammonia, urea, and compound fertilizers. Such information included:

1. Proprietary processes and technology.
2. Manufacturing and marketing data.
3. Skills needed to operate the fertilizer complex and to market its products.
4. Guidance from United States Steel Corporation's offices in the U.S.A. to the Engineering Contractor based on practical experience of United States Steel Corporation of designs, lay-outs, and drawings to be employed in the erection and construction of the fertilizer complex.

Prepared by Gopal Krishnan, under the guidance of Prof. S. Sreenivas Rao.

1 Zuari Agro Chemicals Limited, Prospects, 11th May, 1970, p. 13.

2 Ibid, p. 10.

5. Provision of facilities for training of employees of the company at United States Steel Corporation's Plants in the U.S.A. or elsewhere.[3]

For this, Zuari agreed to issue to the USSC 7,27,500 fully paid-up equity shares of Rs. 10 each.[4]

The complete responsibility for design, engineering, and construction of the plant and its auxiliaries and ancillaries was given to Toyo Engineering Corporation, a unit of Mitsui group of companies of Japan. This company was one of the most successful engineering companies in Japan; it had set up several ammonia and urea plants in different parts of the world. The company had also completed projects in India like the Gujarat State Fertilizer Plant and the urea plant of Indian Explosives Ltd. fertilizer complex at Kanpur in the private sector and the Gorakhpur Fertilizer Plant in the public sector.[5]

Zuari, a Rs. 59.8 crore project held the 44th position among industrial giants in India.[6] The plant's production capacity was 2,20,000 tonnes of ammonia, 3,40,000 tonnes of urea and 1,50,000 tonnes of compound fertilizer per year.[7]

The factory started producing urea in June 1973. Subsequently, ammonia production was also begun. The plant produced 1,000 to 1,100 tonnes of urea and 70 tonnes of ammonia per day, costing about Rs. 800 per tonne for ammonia and Rs. 1,700 per tonne for urea.

The Effluents and the Fish

On September 5, 1973, mass mortality of fish was noticed at Velsao seashore in the vicinity of the factory's discharge point of effluents into the sea. The villagers began to agitate on the issue of sea pollution. They claimed that the arsenic effluent discharged into the sea by Zuari killed the fish in Velsao and posed a threat to marine life. They represented to the Goa Government to take action.[8] The villagers around the factory also complained of seepage and pollution of their wells and damage to crops.

In Goa, the major part of the fish production comes from the inshore fisheries. Fishing accounts for about 3.5% of the total regional income and the primary sector—comprising agriculture, forestry, and fishing—accounted for slightly more than one-third of the total regional income.[9]

The analysis made by the Goa Government's public health laboratory samples of dead fish and sea water from Velsao proved that arsenic was one of the causes of large scale fish mortality in the area.[10]

However, the immediate reaction of the management of the factory was to deny that death of fish was caused by the effluents of the factory. Mr. K.A. Vargis, Managing Director of the factory, stated:

> ..... dead fish on the beach in the vicinity of the factory was noticed just on one day, namely September 5. The plant has been in operation continuously since July. It is unfair, therefore, to attribute this incident to the functioning of the plant.
>
> Zuari Agro Chemicals is by far the most modern chemical complex equipped with modern devices to check pollutants .....
>
> ..... fish mortality can occur owning to various factors. Death of fish did occur in the previous year also in the territory .....[11]

In a report submitted to the Goa Government by a team which included experts from Central Public Health Engineering Research Centre, Nagpur, The Fertilizer Corporation of India and the Factory Advice Service of the Union Government said that because of faulty treatment the effluents discharged from the factory contained arsenic which caused fish mortality.[12]

3 *Ibid.*
4 *Ibid.*
5 *Ibid*, p. 13.
6 *Economic Times*, March 24, 1975, p. 1.
7 Zuari Agro Chemicals Limited, *op. cit.*, p. 7.
8 *Economic Times*, September, 19, 1973, p. 1.
9 Goa, Daman and Diu, Bureau of Economics, Statistics & Evaluation Economic Survey of Goa, Daman and Diu. 1961-71, Panaji, 1973.
10 Economic Times, September 19, 1973, p. 1.
11 Ibid., November 7, 1973, p. 4.
12 *Ibid.*

This team's finding was corroborated by the National Institute of Oceanography, which in its **third report** to the local government said the presence of arsenic was the cause of fish mortality at Velsao. Earlier, in their **first report** which was submitted immediately after the incident, the NIO said that contamination of sea water by arsenic was the cause of fish mortality, but two weeks later it had submitted a **second report** saying that natural phenomenon such as "upwelling of low oxygen layers" was the cause.[13]
(NIO submitted all three reports between September and November, 1973.)

The Goa Government had consistently taken a stance that no industry would be allowed to operate in Goa if it upset the ecological balance of the territory even remotely. Explaining the industrial policy of her government, Mrs. Kakodkar, Chief Minister of Goa, had said that "the government was determined to see that industries with pollution problem did not vitiate the natural environs of Goa."[14]

Following the pollution controversy and the furore sparked off by it, the Goa Government ordered a temporary closure of the factory from November 1, 1973. The government press note said "..... the large scale mortality of fish in the vicinity of the factory's discharge of effluents into the sea was probably 'more due to the release of toxic chemicals from the factory' although there was always a possibility of fish dying due to 'upwelling' in the sea."[15] However, it permitted the factory to resume production under the following conditions:

> The arsenic content in the captive tanks before discharging into the sea, should not exceed 0.02 p.p.m. (parts per million) at the sampling points 50 yards outside the factory where another pipeline of uncontaminated water joins the effluent discharge pipeline and where there is a sampling already; the arsenic content of the two streams together should not exceed 0.1 p.p.m. before they reach sea; the pH value in the captive tanks before discharge into the sea should not be more than 8; measures should be taken to stop seepage from the Bissau Reservoir before the end of May 1974; and if the arsenic content in the captive tanks and the sampling points outside the factory exceeds 0.2 p.p.m. and 0.1 p.p.m. respectively at any time, the factory should automatically be closed down.
>
> As a long term measure, the factory should adopt some other measure instead of the G.V. solution and this is to be completed within one and half years from November 14, 1973. The government will make periodic review of the working of the factory and for this purpose the factory will have to give all the assistance and abide by all the directives issued by the govenment. From December 21, 1973, at the latest, the Zuari Agro Chemicals at their own cost should start supplying drinking water by pipe system to those villages whose drinking water wells have been affected by seepage of the Bissau reservoir. samples of effluent discharged by the factory should be collected from time to time and will be analysed by the factory and the results of this analysis should be opened for inspection by the government any time and the management of the ZAC will be bound to implement all the suggestions made by the government in this regard.[16]

The Union Petroleum and Chemical Ministry Officials also summoned the managing Director of Zuary to Delhi for talks on the issue. He agreed to rectify the defects.

According to the company, great care had been taken when the plant was designed to tackle the effluent problem:

> The effluent discharged contain only very low values of arsenic. The original design has been improved upon further by adding collection pits and captive tanks built at considerable cost on the recommendation of the experts from Central Labour Institute, Central Public Health Engineering Research Institute, Fertilizer Corporation of India, and Gujarat State Fertilizer Co. Ltd. It is stated that the final effluent of this factory even at its factory limits shows very low figures of arsenic, mostly below even detectable limits, i.e., below 0.05 part per million and even this low arsenic effluent is further diluted with blow down water and let into sea at about 100 metres away from

13 *Ibid*, p. 4.
14 *Ibid*., November 27, 1973, p. 3.
15 *Financial Express*, November 28, 1973.
16 *Economic Times*, March 26, 1974.

the coast below the water level enabling further dilution to make it absolutely harmless.[17]

The Effect on the Wells and Paddy Fields

By December 1974, the ammonia effluents discharged into the Bissau reservoir, seeping through sub-soil fissures, began to pollute the wells and paddy fields of the villagers in Sancoale, Pale, and Velsao.[18] The villagers were once again agitated on the isue of pollution. They were backed by the three political parties in Goa: the United Goans, the CBI, and the Goa Pradesh Congress. (The Maharashtrawadi Gomantak Party was in power in Goa and the Congress Party at the Centre.)

The management of the unit, however, tried to play down the effects of the effluents on water and environmental pollution. A newspaper report said:

> The management of the company **maintained** (emphasis added) that reports of pollution effects were largely exaggerated and motivated. A spokesman said, government representatives who visited the factory were satisfied with the steps taken by the company to check pollution. Samples of the effluents were being collected regularly for examination and analysis. Reports of the samples did not reveal any unhealthy trends. No efforts will be spared to rectify and mistakes, provided such mistakes were proved to exist .....[19]

The Goa Government asked Zuari to set up an ammonia stripping plant to control the hazards of pollution. This action of the government followed the damage of over 1.35 lakh sq. metres of agricultural land in Velsao and 20 Pale area and pollution of wells and mortality of fish.[20] The damage to crops was estimated to be Rs. 22,000,[21] per annum. Zuari agreed to set up the plant, but estimated that it would take two years to complete.

According to a newspaper report, an Indian firm had offered Zuari the Reverse Osmosis System for treating the effluents. According to the Managing Director of the firm:

> When the news of pollution and people's agitation first come out we offered them the Reverse Osmosis is system for treating the effluents. The Reverse Osmosis– brakish water and waste effluents economically. But Zuari Agro turned down our proposal saying that they did not want to be the first to try out the process, and become a casualty of its own pollution.[22]

By March 1975, the villagers, with the support of political parties, started agitations and organized a relay hunger-strike to press the issue. The issue came up for discussion before the Legislative Assembly and was embrassing to the government.

On March 29, 1975, the Goa Government served a notice to the company asking it to arrange for the disposal of the ammonia effluents "in a manner so as not to cause nuisance or injury to the public health", failing which to close down the complex. The notice was due to expire on April 10, 1975.[23]

State and Central Government Interests

On getting the order, the Managing Director of the company left for Delhi to consult the Central Government authorities.[24]

The Central Government sent a directive to the Goa Government around April 7, 1975,

17 *Economic Times*, June 3, 1974, p. 8.

18 Effluents from Zuari Fertilizer factory producing ammonia and urea were of three types : 1) blow down from cooling towers and boilers which have no contamination, 2) effluents from gas purification section (GV section), which may occasionally contain traces of arsenic, and 3) effluents from urea plant, which contain traces of ammonia and urea.

19 *Ibid.*, December 29, 1974, p. 6.

20 *Ibid.*, p. 6.

21 As per the report of the Bureau of Economics and statistics, *op. cit.*, per hectare yield of paddy for both kharif plus rabi crops was 2,282 kg. in 1971-72. This was multiplied by the procurement price of paddy of Rs. 74 per quintal (during the year 1974-75) (see Ministry of Agriculture & Irrigation, Government of India, *Indian Agriculture, in Brief*, (Fourteenth Edition), New Delhi, 1975, p. 137.

22 Mr. R.K. Sharma, Managing Director, Starlit Water Treatment, in a letter to the Editor, *Economic Times*, April 25, 1975, p. 5.

23 *Financial Express*, March 31, 1975.

24 *Ibid.*

asking it not to order a closure of the company. "The central directive is based on the argument that the closure will upset the availability of fertilizer at a time when there was a shortage and hurt farmers who are in need of fertilizers."[25] For example, according to a newspaper report, 'rabi production of paddy in Goa itself showed an increase of 7,000 tonnes over the previous year. This was attributed to cultivation in an additional 2,000 hectares of high yielding varieties of paddy.[26] (See Exhibits 2a-e which describe capacity, production, import, and consumption of fertilizers.)

However, on the argument that the pollution from the factory effluents caused severe hardship to the people in the region, the Goa Government rejected the central directive and the state government and the Assembly made a unanimous demand that the company be closed down.[27]

The business circles felt that the closure of the factory would be a serious loss to the national economy, and therefore, the Goa Government should give more time to the management to control the pollution.[28] It was also felt that pollution control technology was in its infancy.

At that time there was report in the press that "the factory management has sought the good offices of Mr. Gurudutt Kakodkar, husband of the Chief Minister, to intervene and bring about a settlement. Mr. Kakodkar may try to give the management some more time to control pollution."[29]

This report was immediately denied by both the Chief Minister and her husband amidst protests from the Assembly members. Reacting strongly to the news item, Mrs. Kakodkar declared that it was "fabricated and malafide and baseless, false and malicious and motivated to malign this administration and to denigrate me."[30] Mr. Gurudutt Kakodkar was also contemplating to give a legal notice to the paper for the publication of the news items in its issue on April 11, 1975.[31]

The management of Zuari said that when the plant would be closed in May for usual maintenance work they would try a new process at a cost of Rs. 27 lakhs to completely eliminate the arsenic content in the effluents. They felt that even then the real problem a certain amount of ammonia pollution—would remain; the company planned to build a third cooling tower by May 1976 to eliminate the ammonia by 50 per cent. They also planned to use the "stipper system" used in US and Japan, but would take two years to install.[32]

Court Hearing

Meanwhile, on April 8, at the first hearing of the case filed by the Goa Government, the goa district magistrate rejected an application by the company that the hearing of the conditional order issued by him asking the management to stop pollution be adjourned for 15 days from April 11, 1975 when the Central Board constituted by the Water (Prevention and Control of Pollution) Act, 1974, would meet in Delhi to discuss this issue. The magistrate fixed April 19 for recording evidence on behalf of the state.[33]

At the hearing of the case, the Goa Government counsel said that the pollution posed serious problems to public health and asked for an interim injunction directing the factory management to close down the factory. The company contended that there was no immediate danger to public life as they provided pipe water to people. It also argued that the closure of the factory would not be in the interest of the national economy because fertilizer was in short supply and large quantities had to be imported. Besides this, it argued, the closure of the factory would render many persons jobless.[34]
(The staff strength of Zuari was about 500.)

On April 19, the magistrate ordered the closure of the company immediately till the fi l

25 *Economic Times*, April 9, 1975.

26 *Ibid*, July 12, 1975.

∠system is the latest proven technology for treating

27 *Ibid*., April 9, 1975.

28 *Ibid*., April 11, 1975.

29 *Ibid*., April 11, 1975.

30 *Quoted Financial Express*, April 15, 1975.

31 *Ibid*.,

32 *Economic Times*, April 11, 1975.

33 *Ibid*.

34 *Ibid*., April 20, 1975.

disposal of the case pending before him.

On April 20, the Goa Government ordered the management to pay full compensation to agriculturists for the damage of kharif and rabi crops and to supply tap water to the existing 15 as well as to an additional 40 taps in the neighbouring villages.[35]

By the last week of June it appeared that the company would have to take some action to reduce the effluents. As a short-term measure, the company could replace the present Vetrocoke process for removal of carbon dioxide by another process called the benefield process. The company could also neutralize the ammonia effluents discharged to the Bissau reservoir by adding sulphuric acid as suggested by the Central Board of Water Pollution. This could be followed by a **medium-term** of construction of a two kilometre sub-marine pipeline into the sea for ensuring maximum dilution of the effluents. It was hoped that this would be innocuous to marine life. As a **permanent** solution, the management had to set up a hydrolyser and ammonia stripper. The total cost of all these anti-pollution measures was estimated to be about Rs. 3 crores.

Exhibit 1
INDIA'S FOREIGN TRADE

(in lakhs of rupees)

Year	Merchandise		
	Imports (−)	Exports (+)	Balance of Trade
1969-70	1,582.10	1,413.27	−168.83
1970-71	1,634.20	1,535.16	−99.04
1971-72	1,824.54	1,608.22	−216.32
1972-73	1,867.44	1,970.83	+103.39
1973-74	2,955.37	2,523.40	−431.97
1974-75	4,519.93	3,330.59	−1,189.34

Source : RBI, Reserve Bank of India Bulletin, June, 1976, S 6453

Exhibit 2(a)
CAPACITY AND FINANCIAL OUTLAY OF FERTILISER INDUSTRY
(as on 1.11.1976)

Year/period	Capacity during the period ('000 tonnes)		Financial outlay during the period (Rs. crore)		
	N	P_2O_5	Public sector	Private sector	Total
Before 1947	5	63	0.8	2.5	3.3
	(5)	(63)	0.8	(2.5)	(3.3)
At the end of 1947	5	5	5.5	0.4	5.9
	(10)	(68)	(6.3)	(2.9)	(9.2)
At the end of 1950	—	34	0.4	1.2	1.6
	(10)	(102)	(6.7)	(4.1)	(10.8)
1951-1955 (I Plan)	90	4	53.7	0.4	54.1
	(100)	(106)	(60.4)	(4.5)	(64.9)
1956-1960 (II Plan)	21	22	4.5	5.3	9.8
	(121)	(128)	(64.9)	(9.8)	(74.7)
1961-1965 (III Plan)	349	146	113.8	8.2	122.0
	(470)	(274)	(178.7)	(18.0)	(196.7)
1966-1968 (Annual Plan)	335	160	94.5	119.3	213.8
	(855)	(434)	(273.2)	(137.3)	(410.5)
1969-1973 (IV Plan)	1092	147	193.1	179.5	372.6
	(1,947)	(581)	(466.3)	(316.8)	(783.1)
a) 1974-75	678	305	112.2	172.6	284.8
	(2,625)	(886)	(578.5)	(489.4)	(1,067.9)
b) 1976 (as on 1.11.1976)	399	41	176.6	—	176.6
	(3,024)	(927)	(755.1)	(489.4)	(1,244.5)
c) Onwards (Project on record as on 1.11.76)	3,319	953	2,375.5	600.0	2,975.8
	(6,343)	(1,880)	(3,130.6)	(1,089.4)	(4,220.0)

Note: 1. Calendar year can be taken as to broadly conform to the financial year, say 1951 = 1951 − 52 and so on.
2. Figures in brackets represent cumulative totals.
3. Investment share of by-product ammonium sulphate factories is not included here as this is not separately available.
4. Rupee was devalued on 6.6.1966. Projects commissioned before that date are on cost related to pre-devaluation and the rest to the post-devaluation of rupee.

Source : Fertilizer statistics, 1975-76.

35 *Ibid.*

Exhibit 2(b)

PRODUCTION, IMPORT, DISTRIBUTION AND CONSUMPTION OF FERTILISERS—1952-53 TO 1975-76 (April/March)

Year	Nitrogenous (N)				Phosphetic (P_2O_5)*				Potassic (K_2O)				Total (N+P2O5+K2O)			Total Value of Import (Rs. million)	Year
	Produced	Imported	Distributed	Consumed	Produced	Imported	Distributed	Consumed	Imported	Distributed	Consumed	Produced	Imported	Distributed	Consumed		
1952-53	53.1	44.0	37.8	57.8	7.4	—	4.6	4.6	3.0	3.3	3.3	60.5	47.0	65.7	65.7	45.6	1952-53
1953-54	52.9	19.0	89.3	89.3	13.8	—	8.3	8.3	7.0	7.5	7.5	66.7	26.0	105.0	105.0	25.2	1953-54
1954-55	68.5	20.0	94.8	94.8	14.3	—	15.0	15.0	11.0	11.1	11.1	82.8	31.0	120.9	120.0	30.2	1954-55
1955-56	76.9	53.0	107.5	107.5	12.4	—	13.0	13.0	10.0	10.3	10.3	89.2	63.0	130.8	130.8	73.3	1955-56
1956-57	78.8	57.0	123.1	123.1	17.6	—	15.9	15.9	15.0	14.8	14.8	96.4	72.0	153.7	153.7	77.7	1956-57
1957-58	81.1	110.0	149.0	149.0	25.8	—	21.9	21.9	13.0	12.8	12.8	106.9	123.0	183.7	183.7	158.8	1957-58
1958-59	80.8	97.0	172.0	172.0	31.0	—	29.5	29.5	22.0	22.4	22.4	111.8	119.0	223.8	223.8	113.1	1958-59
1959-60	83.7	142.0	229.3	229.3	51.4	4	53.9	53.9	33.0	21.3	21.3	135.1	179.0	304.6	304.6	162.9	1959-60
1960-61	112.0	399.0	211.7	21.7	58.7	—	53.1	53.1	20.0	29.0	29.0	165.7	419.0	239.9	239.9	121.8	1960-61
1961-62	154.3	307.0	291.5	249.8	65.4	—	63.9	60.5	75.0	28.0	28.0	219.7	382.0	383.5	338.3	141.1	1961-62
1962-63	194.2	244.0	360.0	333.0	88.3	10.0	81.4	82.8	41.0	36.4	36.4	282.5	295.0	477.9	452.2	236.9	1962-63
1963-64	219.1	228.0	407.0	376.8	107.8	13.0	116.7	116.5	40.0	50.6	50.6	326.9	281.0	574.2	543.9	187.1	1963-64
1964-65	243.2	232.0	434.5	555.2	131.0	12.0	147.7	148.7	57.0	70.4	69.3	374.3	301.0	652.6	773.2	220.8	1964-65
1965-66	237.9	326.0	547.4	574.8	118.8	14.0	132.2	132.5	73.0	77.7	77.3	356.7	413.0	757.3	784.6	411.9	1965-66
1966-67	309.0	632.0	838.7	737.8	145.7	148.0	248.6	248.6	118.0	115.7	114.2	454.7	898.0	1,203.0	1,100.6	1,288.2	1966-67
1967-68	402.5	867.0	1,051.8	1,034.6	207.1	349.0	422.1	446.4	270.0	265.6	204.0	609.8	1,486.0	1,739.5	1,685.0	1,933.0	1967-68
1968-69	563.0	844.0	1,254.9	1,208.6	213.2	138.0	318.8	382.1	213.0	177.6	170.0	776.2	1,195.0	1,751.3	1,760.7	1,629.2	1968-69
1969-70	730.6	667.0	1,040.2	1,356.0	223.7	94.0	234.9	416.0	120.0	132.5	210.0	954.3	881.0	1,407.6	1,982.0	1,167.7	1969-70
1970-71	832.5	477.0	1,310.0	1,479.0	228.1	32.0	305.1	541.0	120.0	197.7	236.0	1,060.6	629.0	1,812.8	2,256.0	767.8	1970-71
1971-72	949.2	481.0	1,652.7	1,798.0	290.3	248.0	473.6	558.2	268.0	256.3	300.0	1,239.6	997.0	2,382.6	2,656.3	899.7	1971-72
1972-73	1,054.5	665.0	1,742.1	1,839.0	330.3	204.0	534.3	581.3	325.0	312.1	347.5	1,384.8	1,194.0	2,588.5	2,767.8	1,212.6	1972-73
1973-74	1,049.9	659.0	1,613.0	1,829.0	324.5	213.0	541.1	649.7	370.0	381.0	359.8	1,374.1	1,242.0	2,535.1	2,838.6	1,767.5	1973-74
1974-75	1,186.6	884.0	1,845.2	1,765.7	331.2	286.0	497.4	471.5	437.0	317.5	336.1	1,517.2	1,607.0	2,660.1	2,573.3	5,991.3	1974-75
1975-76	1,508.0	951.0	1,908.7	2,031.4	319.7	326.0	373.6	453.2	264.0	227.0	269.9	1,827.7	1,541.0	2,509.3	2,754.5	6,969.0*	1975-76

* Excludes data in respect to bonemeal and rockphosphate.
* Provisional

Source : **Fertilizer Statistics**, 1975-76.

Note : 1. From 1952-53 to 1960-61, distribution figures are treated as consumption. From 1961-62 onwards, consumption figures have been taken from Indian Agriculture Brief, Ministry of Agriculture and Irrigation, New Delhi.
2. Imports and value have been taken from the Ministry of Agriculture and Irrigation, New Delhi.

* The steep increase in the total import bill is due to increase in price of chemical fertilizers as a consequence of the Arab-Isreali conflict.

Exhibit 2(c)
ALL INDIA PRODUCTION OF FOODGRAINS

('000 tonnes)

Year	Rice	Wheat	Jowar	Bajra	Maize	Total cereals	Total pulses	Total food-grains
1951-52	21,300	6,813	6,077	2,346	2,076	43,576	8,420	51,996
1952-53	22,899	7,501	7,359	3,192	2,870	50,012	9,189	59,201
1953-54	38,214	8,017	8,082	4,547	3,089	59,203	10,618	69,821
1954-55	25,219	9,043	9,201	3.519	2,975	57,085	10,950	68,035
1955-56	27,557	8760	9,726	3,428	2,602	55,805	11,045	66,850
1956-57	29,037	9,403	7,327	2,873	3,078	58,304	11,551	69,855
1957-58	25,505	7,998	8,635	3,620	3,150	54,749	9,562	64,311
1958-59	30,847	9,958	9,033	3,868	3,463	63,992	13,149	77,141
1959-60	31,676	10,324	8,579	3,493	4,073	64,875	11,779	76,672
1960-61	34,574	10,997	9,814	3,283	4,080	69,314	12,701	82,018
1961-62	35,663	12,072	9,029	3,645	4,312	70,951	11,755	82,706
1962-63	33,217	10,776	9,748	3,959	4,607	68,623	11,528	80,151
1963-64	36,998	9,853	9,198	3,878	4,561	70,569	10,073	80,642
1964-65	39,308	12,257	9,683	4,519	4,664	76,939	12,417	89,356
1965-66	30,589	10,394	7,581	3,752	4,823	62,403	9,944	72,347
1966-67	30,438	11,393	9,224	4,468	4,894	65,884	8,347	74,231
1967-68	37,612	16,540	10,048	5,185	6,270	82,950	12.102	95,052
1968-69	39,761	18.651	9,804	3,802	5,701	83,595	10,418	94,013
1969-70	40,430	20,093	9,721	5,327	5,674	87,810	11,691	99,501
1970-71	42,225	23,832	8,105	8,029	7,486	96,604	11,818	108,422
1971-72	43,068	26,401	7,722	5,319	5,101	94,074	11,094	105,168
1972-73	39,245	24,735	6,968	3,929	6,388	87,119	9,907	97,026
1973-74*	44,051	21,777	9,097	7,519	5,803	94,657	10,007	104,664
1974-75	40,252	24,235	10,221	3,231	5,723	90,667	10,396	101,063

*Provisional.
Source : Estimates of Area and Production of Principal Crops in India, 1974-75, Directorate of Economics and Statistics, Ministry of Agriculture and Irrigation, New Delhi.
Source : **Fertilizer Statistics**, 1975-76.

Exhibit 2(d)
FERTILIZER CONSUMPTION PER HECTARE OF AREABLE LAND*
1973-74 and 1974-75

(Kilograms)

Continent/Country	1973-74				1974-75			
	N	P_2O_5	K_2O	Total $N+P_2O_5+K_2O$	N	P_2O_5	K_2O	Total $N+P_2O_5+K_2O$
Africa	*5.0*	*3.2*	*1.4*	*9.6*	*5.1*	*3.3*	*1.3*	*10.0*
Egypt	125.5	15.6	0.7	141.7	126.1	22.8	1.9	150.7
Morocco	8.2	6.0	3.2	17.3	9.4	7.5	3.8	20.7
South Africa	16.0	22.6	8.8	47.4	30.3	6.3	16.0	52.0
North & Central America	*34.2*	*19.0*	*17.7*	*70.9*	*32.4*	*17.2*	*15.6*	*65.2*
Canada	11.8	10.9	4.6	27.3	11.8	11.2	5.3	28.4
Mexico	19.2	6.3	1.2	26.7	23.9	8.1	1.6	33.7
U.S.A.	40.9	22.8	22.7	86.5	37.7	19.7	19.4	76.7
South America	*7.9*	*10.2*	*6.6*	*24.8*	*8.5*	*11.1*	*6.8*	*26.4*
Chile	10.5	20.4	2.4	33.3	9.1	17.4	2.6	29.1
Peru	28.0	3.2	2.7	33.9	39.5	4.5	4.3	48.3
Asia	*19.9*	*8.2*	*4.5*	*32.6*	*19.6*	*8.0*	*4.7*	*32.4*
Bangladesh	13.9	4.8	1.2	20.0	9.1	3.9	1.2	14.2
China	31.1	9.8	4.1	45.0	30.2	10.1	4.3	44.6
India	11.1	3.9	2.2	17.2	10.7	2.9	2.1	15.7
Israel	72.1	35.7	27.1	134.9	75.8	39.2	35.1	150.1
Japan	145.4	140.4	121.3	407.1	123.0	123.3	128.5	374.9
Korea Rep. of	172.3	82.1	62.8	317.2	184.8	101.6	64.3	350.4
Pakistan	17.2	1.9	0.1	19.2	18.5	2.1	0.1	20.6
Philippines	14.0	5.0	5.4	25.3	17.2	4.6	5.8	27.7
Europe	*73.2*	*61.4*	*61.4*	*201.0*	*78.4*	*55.6*	*57.2*	*191.3*
Austria	81.9	71.7	98.7	252.3	77.7	50.7	77.5	205.9
Belgium	197.9	188.7	231.0	617.7	212.1	157.4	207.8	577.3
Czechoslovakia	77.8	74.0	125.0	276.8	80.9	70.7	127.6	279.2
Denmark	136.8	58.2	76.3	271.3	112.9	42.9	60.0	215.8
Finland	76.1	72.7	58.7	207.5	85.4	75.1	62.1	222.5
France	98.0	115.9	97.6	311.6	82.5	89.6	73.8	245.9
German Dem. Rep. of	137.1	88.6	135.5	361.1	137.3	192.7	146.4	376.3
Germany Fed. Rep.	136.2	113.4	144.0	393.6	148.6	108.5	144.9	402.0

Italy	54.9	38.6	21.9	115.4	54.7	30.0	18.8	103.5
Netherlands	494.0	128.2	136.6	759.0	516.1	108.5	131.9	756.5
Norway	108.0	65.7	89.0	262.7	121.3	74.0	97.7	293.1
Poland	71.1	56.3	93.9	221.3	76.0	58.9	95.7	230.7
Spain	34.7	24.7	13.1	72.5	34.2	25.6	12.8	72.6
Sweden	87.3	53.3	47.6	188.2	77.8	43.8	38.6	160.0
United Kingdom	122.1	66.8	69.5	258.3	128.4	62.3	66.3	257.0
Yugoslavia	41.9	23.9	21.4	87.3	43.6	20.7	20.0	84.3
U.S.S.R.	*27.0*	*11.6*	*15.5*	*54.1*	*29.0*	*13.9*	*15.9*	*58.8*
Oceania	4.6	34.4	6.1	45.1	4.4	20.3	4.8	29.5
Australia	3.9	26.0	2.3	32.3	3.9	14.0	1.8	19.7
New Zealand	38.9	535.0	216.1	790.1	21.4	386.9	169.5	377.9
Fiji	29.8	4.3	1.8	36.0	39.8	9.7	4.1	53.5
World Total	*25.8*	*16.1*	*13.9*	*55.9*	*25.8*	*15.1*	*13.2*	*54.1*

*The term 'Areable land' includes land under permanent crops, temporary crops (double cropped areas are counted once), temporary meadows, land under market and kitchen garden and land temporarily fallow or lying idle.
Source : Annual Fertilizer Review-1975, FAO, Rome.
Source : Fertilizer Statistics, 1975-76.

Exhibit 2(e)

DENSITY OF POPULATION, FERTILIZER CONSUMPTION AND YIELD 1974-75

Country	Fertilizer consumption $N+P_2O_5+K_2O$ per hectare of areable land (Kg.)	Density of population per hectare of areable land	Yield per hectare ('00 kg.)				
			Paddy	Barley	Wheat	Maize	Sugarcane
Australia	19.7	3	51.2	14.4	13.3	25.8	814.7
Belgium	577.3	12	—	46.8	38.2	58.8	—
Germany Fed.	402.0	8	—	42.3	44.7	55.3	—
France	245.9	3	47.2	21.7	38.9	41.0	—
Italy	103.5	6	58.1	25.0	27.1	59.5	—
Netherlands	756.5	17	—	43.0	49.4	70.0	—
United Kingdom	257.8	8	—	41.2	43.8	—	—
U.S.S.R.	58.8	1	40.0	11.0	10.8	27.6	—
Canada	28.4	1	—	21.3	18.0	57.3	—
U.S.A.	76.7	1	51.0	23.6	20.6	54.1	826.0
India	15.7	4	1.8	10.7	13.4	9.7	505.9
Japan	374.9	22	61.8	28.3	26.7	27.5	670.6
Korea Rep. of	350.4	15	53.2	23.9	21.9	16.6	—
China	44.6	6	32.3	15.4	13.8	30.0	705.4
Israel	105.1	10	—	10.8	25.4	70.0	—
Egypt	150.7	14	53.2	33.8	25.0	37.1	813.9

*On average for two hectares of areable land.
Source : 1. Annual Fertilizer Review, 1975, FAO, Rome.
2. Production Year Book Vol. 29, FAO, Rome.
Source : Fertilizer Statistics, 1975-76.

Exhibit 3(a)

ZUARI AGRO CHEMICAL LIMITED
8TH ANNUAL REPORT

PROFIT & LOSS ACCOUNT FOR THE YEAR ENDED 30TH JUNE, 1975

Schedule			Previous period 18 Months to 30th June, 1974.
INCOME	Rupees	Rupees	Rupees
Sales	47,82,50,271		22,91,72,000
Other income 2	12,92,745		8,30,69
		47,95,43,016	23,00,02,369
EXPENDITURE			
Purchase of finished goods	1,70,071		7,28,194
Manufacturing and other expenses 3	21,26,88,739		14,40,23,660
Excise duty and Fertilizer Pool Equalisation charges	19,15,49,096		4,12,50,518
Depreciation	3,98,72,520		3,69,97,322
Interest and other finance charges:			

On long terms loans	3,19,60,105			3,56,22,648
Others	28,86,839			5,91,012
(Increase)/Decrease in stocks of work-in-process and finished goods 4	66,48,057			(1,43,79,835)
		48,57,75,427		24,48,33,519
LOSS before development rebate reserve		62,32,411		1,48,31,150
Development rebate reserve		1,19,00,000		9,74,00,000
LOSS after development rebate reserve		1,81,32,411		11,22,31,150
(LESS)/ADD:				
Development rebate reserve written back		(1,19,00,000)		—
Provision for gratuity written back		(1,98,900)		—
Preliminary and share Issue expenses written off		11,49,287		11,49,287
Loss brought forward		2,16,94,422		83,13,985
BALANCE as per Balance Sheet		12,88,77,220		12,16,94,422

Exhibit 3(b)
ZUARI AGRO CHEMICALS LIMITED
8TH ANNUAL REPORT

BALANCE SHEET AS AT 30TH JUNE, 1975

LIABILITIES				As at 30th June, 1974
	Rupees	Rupees	Rupee	Rupees
SHARE CAPITAL:				
Authorised				
1,27,50,000 Equity Shares of Rs. 10 each	12,75,00,000			12,75,00,000
4,25,000 Redeemable Cumulative Preference Shares of Rs. 100 each	4,25,00,000			4,25,00,000
Issued and Subscribed		17,00,00,000		
1,24,27,500 Equity Shares of Rs. 10 each fully called up	12,42,75,000			12,42,75,00
Less: Calls in arrears	9,625			11,000
		12,42,65,375		12,42,64,000
4,12,500 9.5% Redeemable Cumulative Preference Shares of Rs. 100 each fully called up	4,12,50,000			4,12,50,000
Less: Calls in arrears	500			500
		4,12,49,500		4,12,49,500
			16,55,14,875	16,55,13,500

(Of the above 9,14,964 Equity Shares have been issued as fully paid-up shares for consideration other than cash)

(The Company may at any time after 12 years from 11th July, 1970, i.e. the date of allotment, upon giving 3 months notice in writing, redeem all or any of the Preference Shares at par. Any of the Preference Shares not previously redeemed shall be redeemable at par on the expiry of 15 years from the date of allotment)

Exhibit 3(b) Cont.

LIABILITIES				As at 30th June, 1974
RESERVES AND SURPLUS				
Development Rebate Reserve—				
Balance as per last balance sheet		9,74,00,000		—
Add: Amount transferred from profit and loss account		1,19,00,000	9,74,00,000	
		10,93,00,000		9,74,00,000
Less: Amount transferred to profit and loss account		1,19,00,000		—
			9,74,00,000	9,74,00,000

SECURED LOANS				
From Banks	1,94,09,283			2,45,64,184
From others	34,93,60,208			38,44,05,840
		36,87,69,491		37,89,70,024
(Rs. 67,51,055 (1974-Rs. 63,39,140) from Banks and Rs. 4,34,12,274 (1974-Rs. 4,07,29,750) from others —repayable within one year)				
Interest accrued and due		48,61,613		84,16,419
Secured by the equitable mortgage of land, buildings and other structures erected/to be erected and plant installed/to be installed thereon				
From Banks against hypothecation of inventories, receivables and investments		5,99,23,690		12,44,291
Interest accrued and due		79,294		—
			43,36,34,088	38,86,30,734
Carried forward Rs.			69,65,48,963	65,15,44,234

Exhibit 3(b) Contd.

LIABILITIES				As at 30th June, 1974
Brought forward Rs.			69,65,48,963	65,15,44,234
CURRENT LIABILITIES AND PROVISION				
A. Current Liabilities				
Sundry creditors	1,52,84,712			5,82,25,953
Interest accrued but not due on secured loans	1,07,02,439			63,79,127
		2,59,87,151		6,51,05,080
B. Provisions				
Gratuity	—			1,98,900
Others	49,75,033			25,73,658
		49,75,033		27,72,558
			3,09,62,184	6,78,77,638
Total			72,75,11,147	71,94,21,872

Exhibit 3(b) Contd.

ASSETS				As at 30th June, 1974
FIXED ASSETS	Rupees	Rupee s	Rupees	Rupees
As per Schedule I attached		47,84,25,286		50,67,22,945
Unallocated capital expenditure including advances		5,47,783		53,395
			47,89,73,069	50,67,76,340
INVESTMENTS at Cost				
Trade—Unquoted				
4,000 Equity shares of Indian Potash Ltd. of Rs. 10 each, fully paid.		40,000		40,000
Non-trade—Quoted				
6.25% United States of America Treasury Bonds of the face value of $ 279,000 (1974-$ 100,000) Market value Rs. 23,54,430 (1974-Rs. 7,92,393)		23,54,430		7,92,393
—Unquoted				
National Savings Certificates (Including Rs. 1,000 deposited with Excise Authorities)		2,100		2,100
			23,96,530	8,34,493
CURRENT ASSETS, LOANS AND ADVANCES				
A. Current Assets				
Inventories (At cost or net realisable value whichever is lower)				
Stores and Spares	3,25,32,506			1,97,53,303
Fuel oil	32,88,356			19,11,001
Raw materials	4,28,83,877			63,15,819
Packing materials	99,18,688			15,85,837
Work-in-process	25,97,948			17,04,324
Finished goods	51,58,538			1,27,00,217
		9,63,79,911		4,39,70,501

Exhibit 3(b) Contd...

ASSETS				As at 30th June, 1974
Sundry Debtors				
Outstanding for more than 6 months (unsecured)				
Considered good	—			—
Considered doubtful	—			37,692
	—			37,692
Less: Provision for doubtfuldebts	—			37,692
Outstanding for less than 6 months (unsecured)		—		—
Considered goods	5,30,772	5.30		99,80,085
		5,30,772	—	99,80,085
Carried forward Rs.		9,69,10,683	48,13,69,599	56,15,61,419
Brought forward Rs.		9,69,10,683	48,13,69,599	56,15,61,419
Cash and Bank balances				
Cash on hand	28,727			35,292
With Scheduled Banks:				
On current accounts	23,89,452			1,83,84,000
On short term deposits	—			1,83,84,000
		24,18,269		1,85,73,648

Exhibit 3(b) Contd....

ASSETS				As at 30th June, 1974
B. Loans and Advances (considered good)				
Advances recoverable in cash or in kind or for value to be received				
Secured	6,92,960			4,35,826
Unsecured	60,90,909			63,93,265
With Customs, Port Trust etc.—unsecured	19,57,209			4,19,707
		87,41,078		72,48,798
			10,80,70,030	7,97,73,032
MISCELLANEOUS EXPENDITURE				
(To the extent not written off)				
Preliminary expenses		70,57,261		79,39,418
Share Issue expenses		21,37,037		24,04,167
			91,94,298	03,43,585
PROFIT AND LOSS ACCOUNT				
Balance as per profit and loss account			12,88,77,220	12,16,94,422
TOTAL			72,75,11,147	71,94,21,872

SCHEDULE FORMING PART OF THE BALANCE SHEET AS AT 30TH JUNE 1975

SCHEDULE 1: FIXED ASSETS

	COST			DEPRECIATION		NETBOOK VALUE	
	As of both June, 1974	Additions/ (Deductions)	As of 30th June, 1975	As of 30th June 1974	For the year/ (Deductions)	Upto 30th June 1975	As of 30th June, 1975
Land (Freehold)	25,48,163	-	25,48,163	-	-	-	25,48,163
Buildings	2,10,37,652	6,993	2,10,44,645	4,05,255	2,73,703	6,78,956	2,03,65,687
Railways Siding	67,16,012	-	67,16,012	4,56,688	4,56,690	9,13,378	58,02,634
Plant and Machinery	50,85,05,609	1,12,56,384	51,97,61,993	3,55,74,478	3,87,93,071	7,43,67,549	44,53,94,444
Vehicles	13,91,500	2,18,346	14,80,802	2,45,667	1,00,487	3,25,616	11,55,186
		(1,29,044)			(20,538)		
Furniture, Fittings, and Office equipment	25,87,571	2,02,931	27,88,893	3,63,599	1,39,444	5,02,721	22,86,172
Books-Marketing				(322)		2,18,250	
Know-How	10,91,250		10,91,250	1,09,125	2,18,250		8,73,000
TOTAL RUPEES	54,38,77,757	1,16,84,654	55,54,31,758	3,71,54,812	3,98,72,520	7,70,06,472	47,84,25,286
		(1,30,653)			(20,860)		
Previous Year Rupees	15,20,309	54,24,13,114	54,38,77,757	1,64,869	3,69,97,322	3,71,54,812	50,67,22,945
		(55,666)			(7,379)		

SCHEDULE FORMING PART OF THE BALANCE SHEET AS AT 30TH JUNE 1975

SCHEDULE 1: FIXED ASSETS

	COST			DEPRECIATION		NET BOOK VALUE	
	As of both June, 1974	Additions/ (Deductions)	As of 30th June, 1975	As of 30th June, 1974	For the year/ (Deductions)	Up to 30th June 1975	As of 30th June, 1975
Land (Freehold)	25,48,163	-	25,48,163	-		-	25,48,163
Buildings	2,10,37,652	6,993	2,10,44,645	4,05,255	2,73,703	6,78,956	2,03,65,687
Railways Siding	67,16,012	-	67,16,012	4,56,688	4,56,690	9,13,378	58,02,634
Plant and Machinery	50,85,05,609	1,12,56,384	51,97,61,993	3,55,74,478	3,87,93,071	7,43,67,549	44,53,94,444
Vehicles	13,91,500	2,18,346 (1,29,044)	14,80,802	2,45,667	1,00,487 (20,538)	3,25,616	11,55,186
Furniture, Fittings, and Office equipment	25,87,571	2,02,931 (1,609)	27,88,893	3,63,599 (322)	1,39,444	5,02,721	22,86,172
Books-Marketing Know-How	10,91,250	-	10,91,250	1,09,125	1,09,125	2,18,250	8,73,000
TOTAL RUPEES	54,38,77,757	1,16,84,654 (1,30,653)	5,54,31,758	3,71,54,812	3,98,72,520 (20,860)	7,70,06,472	47,84,25,286
Previous Year Rupees	15,20,309	54,24,13,114 (55,666)	54,38,77,757	1,64,869	3,69,97,322 (7,379)	3,71,54,812	50,67,22,945

Exhibit 3(b) Contd..

ASSETS				As at 30th June, 1974
Sundry Debtors				
outstanding for more than 6 months (unsecured)				
Considered good	-			-
Considered doubtful	-			37,692
	-			37,692
Less: Provision for doubtful debts	-			37,692
Outstanding for less than 6 months (unsecured) considered goods	5,30,772	5,30		99,80,085
		5,30,772		99,80,085
Carried forward Rs.		9,69,10,683	48,13,69,599	56,15,61,419
Brought forward Rs.		9,69,10,683	48,13,69,599	56,15,61,419
Cash and Bank Balances				
Cash on hand	28,727			35,292
With Scheduled Banks:				
On current accounts	23,89,542			1,83,84,000
On short term deposits	-			1,83,84,000
		24,18,269		1,85,73,648

Exhibit 3(b) Contd....

ASSETS				As at 30th June, 1974
B. Loans and Advances (considered good)				
Advances recoverable in cash or in kind of for value to be received				
Secured	6,92,960			4,35,826
Unsecured	60,90,909			63,93,265
With Customs, Port Trust etc.—unsecured	19,57,209			4,19,707
		87,41,078		72,48,798
			10,80,70,030	7,97,73,032
MISCELLANEOUS EXPENDITURE				
(To the extent not written off)				
Preliminary expenses		70,57,261		79,39,418
Share Issue expenses		21,37,037		24,04,167
			91,94,298	1,03,43,585
PROFIT AND LOSS ACCOUNT				
Balance as per profit and loss account			12,88,77,220	12,16,94,422
TOTAL			72,75,11,147	71,94,21,972

UNIT 12 SOCIAL AUDIT

Objectives

After reading this unit you should be able to:

- understand the meaning and scope of Social Audit
- appreciate the importance of Social Audit
- explain the difficulties involved in Social Audit
- discuss the status of social audit in India
- imagine the future of social audit

Structure

12.1 INTRODUCTION

It is generally believed today that it is the duty of the privately owned enterprise to ensure that it does not adversely affect the life of the community in which it operates. Though the duty is not clearly defined, it is usually thought that the corporate business should not cause pollution, should not discriminate in employment, should not make money from insavoury or immoral activities and should not withhold information from consumers about their products. It is also expected that they should make positive contribution to the life of the community.

The corporate business has become an integral part of the functioning of any society. It is the recipient of the benefits and privileges of the State and society in which it operates. The society therefore expects the corporate business to assume responsibility towards it. Earlier it had been assumed that the vast material resources like water, land and air could absorb the wastes of production and neutralise any potential harmful effects. Man assumed that the natural environment would always renew itself. It is abundantly clear now that this is not so. It is common knowledge that society is being threatened by pollution of land, sea and air. To an increasing degree, business has been creating conditions that have resulted in many social ills, though the same may not be by design or choice. There are various social abuses, some germane to the profit persuit, some to the negligent and unscrupulous behaviour of business leaders. Most would agree that if these conditions are permitted to continue it must inevitably lead to social suicide. Steps must be taken to correct the abuses.

With changing social and economic values and with increasing expectations of society from corporate business, the companies that adjust to the rational changes and help in pioneering such changes are likely to survive and flourish and those which oppose, block or restrict the

changes may find it difficult to survive in future. Economic goals of corporate business can no longer be separated from social goals.

Firms have to recognise their due responsibilities and consider these in the planning and action stages. They must have a social policy which means that they must include in their accounting the direct costs to society of their operations to the extent possible. They should communicate their social policy not only to the members of the organisation but also to outside groups. Social audit is a tool for judging how a corporate entity has implemented its social policy.

The increasing demand for socially oriented programmes of one kind or another and for measurement and disclosure of environmental effects of organisational behaviour has created pressure for adopting some kind of social auditing procedure. This unit attempts to provide a general definition of social audit, discusses the various approaches or methodologies for conducting social audit and points out the difficulties encountered in measuring social performance etc.

12.2 WHAT IS SOCIAL AUDIT?

Social audit has been variously defined. As it happens with any new management technique, there is not yet any definition which has gained general acceptance. Bauer and Fenn define social audit as "a commitment to systematic assessment of and reporting of some meaningful definable domain of a company's activities that have social impact"[1]. The author's emphasis is on the assessment and reporting of corporate social programmes. Dilley defines the social audit as "investigation of an enterprise's performance as a member of the community in which it has its primary impact; such investigations consisting of the preparation of an inventory of the socially relevant activities of the enterprise, quantification (to the extent possible) of the social costs and benefits resulting from those activities, and compilation of other quantitative information providing insight into the social performance of the enterprise".[2] Dilley's definition highlights the making of an inventory of the socially relevant activities and their quantification in terms of costs and benefits.

Caroll and Bailer, describe social auditing "as a form of measurement". According to them, "social audit is a natural evolutionary step in the concern for operationalising corporate social responsibilites and, in its essence, represents a managerial effort to develop a calculus for gauging the firm's socially oriented activities. That is, it is an attempt to measure, monitor and evaluate the organisation's performance with respect to its social programmes and social objectives".[3] Ahmed Belkaoui has attempted to collate the definitions by Bauer and Fenn, and by Dilley. He states that "Social Audit—much like the financial audit—is an **identification** and examination of the activities of the firm in order to **assess, evaluate, measure** and **report** their impact on the immediate social environment".[4] The words in bold are important in this definition which require some elaboration:

1. **Identification** assures a tracking down and inventory of all the firm's activities having potential impact on the firm's environment. Identification will result in a definition of the social dimensions of the firm's activities in terms of social costs or social benefits depending on the nature of their impact on the social environment.
2. **Assessment and evaluation** imply the categorisation of the firm's impact on its environment as either positive social benefits or negative social costs.
3. **Measurement** implies the assignment of a quantitative or qualitative score to the social costs and benefits identified in assessment and evaluation.
4. **Reporting** assumes the disclosure of the firm's performance as measured.

12.3 WHY SHOULD FIRMS UNDERTAKE SOCIAL AUDIT?

In the United States several people and groups have been active in championing the cause of consumer protection and environmental conservation. People like Ralph Nader have been very active on social issues. Hounded by critics like him, some of the biggest US companies including Bank of America, American Telephone and Telegraph Company (ATT) have long

back looked for ways by which they could measure the performance of their activities which affected the society around them or assess the true costs of such programmes. Social audit helps the management to determine areas where the firm could be vulnerable to public criticism. The firm can inform the public of what it is doing in the area of social responsibility. It can thus offset irresponsible appraisal or audit done by outside self-appointed groups, including press. The firm can present a true picture to the public of its corporate accountability in the social area. However, social audit is not just a way to appease the outside critics; it is meant to satisfy business leaders' own conscience and curiosity. It enables the firm to identify those social programmes that the firm feels it ought to be pursuing and to examine and evaluate what it is actually doing in those selected areas. The very fact that a firm has social auditing procedure injects a social point of view into the general thinking of managers.

A survery of 880 companies was conducted by the Committee for Economic Development to find out the current business practices of corporate business in the United States regarding social audit. 284 companies responded to the survey. One of the questions asked was whether the company had inventoried or assessed what it had done in certain specific social fields. 76% answered that they had made such an inventory or assessment since January 1, 1972. That is, almost three fourths of the companies had performed a form of social audit. In response to the question whether the company had given any person, organisation unit or group responsibility for surveying more or less continuously the evolving demands for social action programmes, 70% answered that they had assigned such responsibility. It was further found that 70% of the companies performed social audit voluntarily for their own management purposes. 30% made their social audit reports available to the general public whereas 38% routed them to executives only. In response to a question designed to establish whether executives thought the corporations would be required in the future to do social audit, 44% thought such audits would be required.[5]

In 1976, of the Fortune 500 companies, it was found that 91% made some kind of social disclosures in their annual reports to stockholders, as compared to 57% in 1973. The manner of reporting social actions, however, varied considerably, ranging from observations within the body of the President's letter to shareholders to a structured separate report. Only seven of the Fortune 500 corporations reported their social actions in a separate report.[6]

A Ford Foundation supported study found that 57% of institutional investors took social considerations into account in the selection of investments. In addition, they reviewed the social aspects of their investment policy on a current basis.[7] A U.S. Chamber of Commerce study conducted a number of years ago recommended that wherever possible, each business firm should quantify costs and benefits of its social performance in order to help plan and measure its social action programmes. It further urged business firms to develop a social audit procedure.[8]

The above surveys indicate that social audit has been gaining ground and its use is increasing. It appears that the new development of social audit is not merely in response to the demands of consumer activist groups or government regulatory bodies; the business executives themselves recognise that such analysis has become a basic ingredient of effective management in todays social climate.

Activity 1

a) What activities of the organisation in which you are working (or with which you have been associated) fall, in your view, in the area of social responsibility?
   1.
   2.
   3.
   4.

b) What kind of social reporting is done by your organisation?

   .....

   .....

   .....

c) Is your organisation, in your view, doing enough, as a responsible corporate citizen? Give reasons in support of your answer.

12.4 TYPES (OR FRAMEWORKS) OF SOCIAL AUDIT

The term social audit appears to have been first used by Theodore J. Krepps of Stanford University in 1940 in his monograph titled "Measurement of the Social Performance of Business".[9] Krepps opined that to make an objective social audit of business it must be limited to the items that are measurable. These, while few in number, he stated, are by no means of small importance or significance.

His attempt at social audit was limited to six measurements:

1) Employment
2) Production
3) Consumer effort (what have consumers been compelled to surrender for exchange for what they have got?)
4) Consumer funds absorbed (what has happened to the stream of dollars which the industry has collected from the public and its customers, in exchange for services rendered?)
5) Payrolls
6) Dividends and interest

Krepps himself admitted that his measure did not constitute a complete audit. But his analysis served to show that application of social audit was feasible for the entire industry, for a segment of the economy or for an individual company.

Whatever measures of social performance are being used presently by many companies in the United States, they range from the simplistic inventorying of everything that a management itself considers a social activity to the rather sophisticated analysis involving the need of society and the part the corporation plays in fulfilling those needs. For example, in General Electric Company, its strategic social planning and evaluation is built on a foundation of four major cornerstones: ***social, political, economic, and technological.*** Included in its planning process is the development of a long-term environmental forecast. This is to establish the environmental assumptions upon which corporate marketing, manpower, technological, financial and social strategies are to be based. Another example is that of a leading food company which initiated its own strategy planning with an ambitious corporation-wide "social inventory". The purpose of this information-gathering effort was to define in numerical terms what is being done, to spell out current social policies, and to clarify existing social goals. This is to "ascertain what we are now doing and help us plan what progress we should expect in selected areas". The social inventory was viewed as an essential first step towards ongoing social audits. The company stressed that the initial inventory was not intended for public disclosure. This was to come later after much more experience. The company organized a "Social Audit Task Force" in the winter of 1972 to develop the inventory and to try to identify what society expects of the company. Significant impact areas were placed high on the list. In general, the inventory broke down into three major sectors: (1) public, (2) consumer and (3) employee. Items under "public" included charitable giving, composition of the board of directors, recruiting of women and minorities, and ecology. Under "consumer", the topics listed included advertising, consumer complaints, product safety, packaging, and labelling. And the "employee" category included pay and fringe benefits, employee safety, and responding to the employee voice.

Various types or frameworks of social audit have been proposed in the literature. They differ in terms of objectives, methodologies and results. However, various types of social audit can be grouped into the following categories:

- Social Process or Programme Management Audit
- Financial Statement Format Audit
- Macro-Micro Social Indicator Audit
- Corporate Rating Audit
- Constituency Groups Attitude Audit
- Partial (or Aspect) Audit (energy, environment etc.)
- Comprehensive Audit

We shall now discuss all these types of audit one by one.

Social Process Audit

The social process audit or programme management audit is associated mainly with the Bank of America. It is an attempt to measure the effectiveness of those activities of the corporation which are undertaken largely for social reasons. It aims to develop an internal management information system that will allow management to create and administer the socially oriented programmes in a better way. For example, the four social programmes selected initially by the Bank of America included the Student Loan Programme and Minority Enterprise Programme. The bank set to determine whether or not the programme objectives had been met. The social process audit generally contains three elements.

Historical Perspective: The auditor analyses the actual reasons for a particular social programme and the original objectives of the programme, which help the formulation of realistic objectives and assess future possibilities.

Cost Analysis: The auditor compiles the costs resulting from the adoption of each programme. These costs are generally comprised the direct costs, allocated costs, and opportunity costs associated with each programme.

Benefit Analysis: The auditor compiles the social benefits of each programme that can be quantified. Where quantification is not possible, surveys may be conducted to determine from those affected by the programme whether or not the objectives have been met.

Bauer & Fenn also proposed process audit which requires executives to examine what they are doing and how they are doing it. According to the authors, process audit simply put "is a rather sophisticated insightful discription of what is being done through particular social programme, as contrasted with trying to measure what is being accomplished and how effective it is which is the focus of performance audit".[10]

The method of process audit involves four steps:[11]

1) An assessment of circumstances under which each social programme audited came into being
2) The goals of the social programme are spelt out.
3) The rationale involved, that is, how the company plans to attain the goals are explained.
4) What is being actually done as opposed to what ought to be done according to the rationale is described (quantitatively where possible).

The objectives of these steps are to help the company assess and evaluate its social programmes systematically.

Bauer and Fenn contend that the community at large is not so much interested in the results of various social programmes as it is in the answer to one key question: Is this company really trying? They believe that the most effective kind of social audit is one that would get information to the public so it can answer that question. That is precisely the purpose of process audit.

The authors claim that the process audit reveals the nature of company's efforts better than either the monetary figures or performance figures. It enables the people to (i) see what the company is doing; and (ii) judge with what seriousness the management takes its social responsibility. The people can judge whether the company is a "responsible" company. It will force the executives of the company to sit down and say "what we are doing and how we are doing it". Most companies in their opinion do not often know that.

Bauer, Cauthorn and Warner subsequently went a step further and proposed a Management Process Audit Manual for assessing the organisational readiness of a firm to implement organisation-wide policy in the area of recent social concerns.[12]

According to Linowes, process audit reflects only some of the company's social contributions and ignores its harmful social actions and inactions. He contends that with militant monitoring groups and government agencies increasing in number, size, sophistication and resolve, visibility should be given to both the pros and cons of social activities. Whether a company likes it or not he says a number of outside watchdogs are reporting corporate activities in their own terms and from their own terms of reference. He asks, would a company not be better served by telling the truth in a creditable manner about

its social actions, positive or negative, than by having uninformed reporters air the story for them?[13]

Linowes proposes what he calls Socio-Economic Operating Statement (SEOS) as an alternative to social process audit which we shall take up a little later.

Financial Statements Format Social Audit

The main idea in this type of audit is the preparation of annual statements (balance sheet and income statement, both or any one of them similar in format to the conventional financial statements that in addition include social information. There are two versions of this type of social audit, one proposed by Abt Associates and the other suggested by David F. Linowes.

Abt Associates' proposal

The proposal of Abt Associates, a management consultancy firm, is to compute and disclose the results of all the transactions of the firm with its social environment. The Balance Sheet would include a list of the social assets on one side and a list of social commitments, liabilities, and equity on the other side. The Income Statement would include the social benefits, the social costs and the net social income provided by the company operations to the staff, community, general public and clients. To illustrate the proposal, Abt Associates sponsored a social audit of its own activities and disclosed the results in the Annual Reports for 1971, 1972, 1973 and 1974. An example of Abt's social audit is shown in Appendix I which includes social and financial Balance Sheet 1973, along with notes, and social and Financial Income Statement 1973, along with notes. Though not made explicit, it will be seen that the Balance Sheet has two sections on each side. The first section (i.e., upper portion) of the asset side has staff, organisational assets and use of public goods. The liability side has staff and organisational liabilities and public liability. These are then followed by the usual financial assets and liabilities respectively on the two sides. The difference in the two sides has been shown as society's equity since increases are more than the decreases (net social assets).

Activity 2

Please go through the Social Audit statements of Abt Associates, once, twice or, if necessary, thrice and read the corresponding notes for various items shown in the Statements and fully grasp the details. If you have any doubts regarding any item or note, discuss with your counsellor. Also write a note, pointing out the merits and demerits of Abt's approach.

Linowes Model

Linowes, a certified public Accountant, describes the Abt approach as a confusing form of social report. To him, the report, patterned after the conventional financial statements and listing so called social assets available and social commitments, obligations and equity is an exercise which is unnecessary cumbersome and complicated. He went on further and stated that it was not clear what the significance of the result was supposed to be. Linowes' proposal is similar in format to the Abt proposal but differs in content by being restricted to expenditures undertaken voluntarily to improve the welfare of employees and the public product safety or environmental conditions. All such expenditures are designated as improvements. The expenditures required by law or union contract are not included because they are perceived as both mandatory and necessary costs of doing business. Without such expenditures the corporation could not continue business. Linowes, however, agrees that positive social actions undertaken by a corporation even when they are mandated by law or contract could be shown by means of footnotes to the format he calls Socio Economic Operative Statement (SEOS). Against the *probono publico expenditures* are offset those costs of socially beneficial items which have been brought to the attention of management and which a 'reasonably prudent socially aware management' would be expected to undertake, but a particular management has chosen to ignore. Such costs are known as "detriments".

The specific items to be included in the tabulation are: cost of a training programme for handicapped workers; cost of reclaiming and landscaping an old dump on company property; cost of installing pollution control devices on smokestacks; cost of detoxifying waste from finishing processes; cost of substituting lead-free paint for previously used poisonous lead paint.

Linowes provides some basic guidelines for preparing SEOS which are as follows:

- If a socially beneficial action is required by enforceable law and regulations, it is not included on a SEOS statement.
- If a socially beneficial action is required by law, but is ignored, the cost of such item is a "detriment" for the year. The same treatment is given to an item if postponed, even with governmental approval.
- A prorated portion of salaries and related expenses of personnel who spend time in socially beneficial actions or with social organisations is included.
- Cash and product contributions to social institutions are included.
- The cost of setting up facilities for the general good of employees or the public, if done without union or government requirement, is included.
- Expenditures made voluntarily for the installation of safety devices on the premises or in products and not required by law or contract are included.
- Neglecting to install safety devices which are available at a reasonable cost is a "detriment."
- The cost of voluntarily building a playground or nursery school for employees and/or neighbours is included. Operating costs of the facility in each succeeding year are also included.
- The cost of relandscaping strip-mining sites or other environmental eyesores, if not required by law, is included.
- Extra costs of designing and building business facilities of unusually high beauty, health, or safety standards are included.

The items, either positive or negative social actions and inactions, are then classified on a SEOS into three groups: **relations with people; relations with environment** and **relations with product.** An example of SEOS is presented in Figure 12.1. The statement shows separate accounts for activities "relating to people" with a "net improvement" balance of $ 16,000, and those involving "relation with environment" with a net deficit of $ 97,000, and "net improvements" in product actions of $ 16,000. The total socio-economic benefit for the year is $ 69,000.

Figure: 12.1 CHEM PRODUCTS MANUFACTURING CO., INC.
SOCIO-ECONOMIC OPERATING STATEMENT FOR THE YEAR ENDING DECEMBER 31, 19 ...

I			
Social Actions—People-Related			
A—	IMPROVEMENTS		
	1. Minority enterprise technical assistance program	$ 4,000	
	2. Emergency flood relief	3,000	
	3. Training program for handicapped workers	8,000	
	4. Executive time—hospital trusteeship	5,000	
	5. Minority hiring program—extra training and turnover costs	6,000	
	6. Day-care center for children of employees—set-up and maintenance cost: voluntarily established	11,000	
	Total Improvements		$37,000
B—	LESS DETRIMENTS		
	1. Postponed installation of hydraulic safety control system—cost of unit	16,000	16,000
C—	PEOPLE-RELATED ACTIONS—NET IMPROVEMENT FOR THE YEAR		$21,000
II			
Social Actions—Environment-Related			
A—	IMPROVEMENTS		
	1. Cost of installing water quality monitoring system to control pollution	22,000	
	2. Cost of clearing and landscaping company-owned ravaged area and dump	41,000	
	3. Executive time-free consulting service to state environmental protection agency	4,000	
	Total Improvements		67,000
B—	LESS DETRIMENTS		
	1. Deferral of liquid waste treatment facility	60,000	
	2. Postponed installation of higher smoke stacks to reduce air pollution	19,000	
	Total Detriments		79,000
C—ENVIRONMENT-RELATED ACTIONS—NET DEFICIT FOR THE YEAR			($12,000)
III			
Social Actions—Product-Related			
A—IMPROVEMENTS			
	1. Voluntarily discontinued alkaline product judged unsafe for home use—projected annual net income	23,000	
	2. Salary of chemical engineer on loan to government product safety committee	21,000	
	Total Improvements		44,000

B—LESS DETRIMENTS		
1. Cost of process redesign to reduce manufacturing hazard—recommended by Safety Council, but implementation deferred	36,000	36,000
C—PRODUCT-RELATED ACTIONS—NET IMPROVEMENT FOR THE YEAR		$8000
Total Socio-Economic Improvements for the Year Ending December 31		$17,000
Add: Net Cumulative Socio-Economic Improvements as at January 1		$176,000
GRAND TOTAL NET SOCIO-ECONOMIC IMPROVEMENTS TO DECEMBER 31		$193,000

Source : Hayel Carl (eds.), 1982, the Encyclopedia of Management (3rd Ed.), Van Nostrand Reinhold, New York et al, p.1118.

The author of SEOS model suggests that the statement could be prepared by a small interdisciplinary team. Members of the team might include a seasoned business executive, sociologist, accountant, public health administrator, economist, or members of other disciplines whose specific expertise would apply to a particular industry or circumstance. The statement thus prepared would then be audited by an outside independent interdisciplinary team. The author suggests the enactment of suitable legislation which should allow a company to deduct against taxable income for net social expenditure shown on the SEOS for the year which exceeds a certain percentage (he proposes 1%) of the tax payer's net worth. This would be in addition to all other expenses and depreciation allowances already made for these same items.

There are some obvious difficulties with the approach based on financial statement formats, whether Abt's or Linowes'. It may be difficult to estimate monetary value of some of the social benefits and costs. According to Bauer, though the quantitative exercise may be helpful for internal decision-making and planning, converting social programmes into numbers may camouflage what the public is more likely to be interested in knowing. Bauer says, "frankly, we're just skeptical about being able to convert social benefits exclusively into dollar terms." Bauer also finds problem with many companies which concentrate on the cost side of cost-benefit equation, and attempt to measure "what is called the true costs" of their social programmes as opposed to the merely out-of-pocket costs. Bauer and Fenn cite an example of a telephone company which had hired large number of unskilled employees from minority groups. When the complaints soared, the company attempted to determine what its true costs were. They caution that social audits reported in quantitative terms in the financial statement format might make an inefficient management appear more socially responsible than an efficient management.

Linowes quantifies social actions by directly considering the cost actually incurred by the company for socially responsible actions as a "benefit" and the actual cost avoided by the company by not undertaking the project as a "detriment". The problem with this measure is that the actual benefit to society may have little connection with the project cost. For example, a pollution control project may cost a company Rs. 1 lakh, but the benefit in terms of a cleaner environment may be far more. That Linowes is concerned with only voluntary actions seems to be yet another shortcoming of his approach. The omission of monetary expenditures would not show fully what a company is doing in this area.

Macro-Micro Social Indicator Audit

This type of audit consists of evaluating the company's performance in terms of its social indicators (micro indicators) as against macro social indicators.

Macro social indicators are measures which reflect certain (adequate) level of needs which are expected to be met in conformity with the social goals set by the community (or society) for itself. (For example, quality of life is generally accepted as the goal by many a society.) These needs may cover health and safety, education, housing, enjoyment of leisure and other items like poverty, industrial accidents, degree of pollution considered important by society. Macro social indicators (or performance levels) may be developed for the country as a whole, a state, region or even a city.

Micro social indicators are measures of the performance of the company in those areas measured by macro social indicators. The macro-micro social indicator audit attempts to compare micro social and macro social indicators in order to assess the quality of social performance of the organisation. The macro performance levels may be taken to be equal to 100 and then the index for the micro social indicators may be computed. For example, a city Housing Development Authority sets a target of 10,000 additional dwelling units for a certain year against the existing demand for 1,00,000 such dwelling units. This means the

Authority will cater to 10% of the existing demand in that year. A housing finance bank in that year grants loans for construction of dwelling units to 200 applicants against 1600 applications received. Hence it met 12.50 per cent of the demand addressed to it. Its index of social performance in this area will be 125 against macro index of 100. In a similar vein, indicators can be developed, for instance, in the areas of family planning (or family welfare), or similar other areas. One good example of this type of audit in the USA is the one used by the First National Bank of Minneapolis. The Bank applied the social indicator approach to corporate community involvement. Their annual report disclosed the following aspects of the quality of life in the Twin Cities: housing, education, public safety, income, job opportunities, health, transportation, participation, environment, culture, human relations, and community investment. It then measures, through the use of macro-micro social indicators, the quality and the quantity of its activity in each area.

An important assumption implicit in the macro-micro social indicator audit is that social indicators can be developed to reflect the impact of the various activities on the overall "quality of life" and that the activities of business firms can be traced to ascertain their impacts on these indicators. The macro social indicators may just not be available, and if available, may not be reliable. The reliability of social indicators for meaningful inferences may be highly doubtful. Does an increase in home ownership really indicate better housing? Does an increase in the number of students seeking admission to colleges really indicate higher quality education or higher educational level? Furthermore, it is almost impossible for any organisation to determine what impact their individual programmes have had on changes observed in the community. So many variables may be at work simultaneously in any community that the contribution of the organisation is likely to be obscured.

Nonetheless, the macro-micro social indicator audit has certain benefits. It allows all the firms to compare their contribution towards social goals on a common/rational basis (i.e., goals or indicators). This ensures consistency and comparability of the report of various organisations.

The Corporate Rating Approach

The corporate rating approach is also known as social performance audit. The corporate social ratings are mainly initiated in the United States by church groups (e.g., United Church of Christ), Universities (e.g., Yale University), mutual funds (e.g., dreyfuss Third Century Fund), consumers protection groups (e.g., Ralph Nader's organisations), public interest research organisations (e.g., the Council on Economic Priorities), and other "ethical investors" concerned about being "socially responsible" in their portfolio choices. Such groups, institutions or organisations regularly evaluate, compare and rank leading corporations in their efforts to keep the public informed or enable themselves to make suitable choice. Each of these groups has determined its own form of rating system aimed generally at evaluating the environmental impact of organisational behaviour and the adequacy of the organisational responses. The most prevalent method is to use opinion polls in which respondents are asked to rate the social performance of leading corporations.

Two organisations, known to have adopted more rigorous types of corporate rating audit, are: the Council on Economic Priorities (CEP), a public interest research organisation, and the Interfaith Centre on Corporate Responsibility (ICCR). The corporate audit performed by the CEP consists of indepth factual analysis and reporting of the performance of selected firms and industries with respect to some particular areas of social concerns. The council has performed various audits, including pollution in the steel industry, pulp and paper industry, and electric power-generating installations etc. The audit performed by ICCR is intended to influence the portfolio decision of their member church organisations. It combines a concern for social performance with an active concern for social justice. The second concern consists of denouncing and opposing companies operating in a country such as South Africa where apartheid is practised and companies which discriminate against women and minorities in their corporate personnel practises. Thus, the strategy of ICCR is characterised by its active involvement in political and social areas.

The Constituency Group Attitudes Audit

As was explained in the previous unit, a company has multiple consequencies. Various groups or stakeholders who are interested in it have their own goals and criteria for evaluating a company's behaviour. The extent of pressures of these groups on the company depends upon their relative strength. The constituency group attitudes audit has been suggested as a way of identifying and measuring the attitudes and preferences of these

groups for corporate actions. Incorporation of this information into decision-making strategies, it has been argued, would maximise social satisfaction, sustain incentives for its shareholders to continue investing in it, and mobilise resources effectively so that its traditional constituent groups, e.g., employees, creditors, suppliers and buyers are satisfied with its performance.

The methodology for carrying out a corporate constituency attitudes audit includes five steps:

First, the priorities of the corporate constituency reference groups are monitored and identified. This is by no means an easy task because it may require confronting groups which may be hostile to the firm.

Second, the criteria considered important to those groups are specified. These criteria (or dimensions) may be either qualitative or quantitative and may vary depending upon the groups whose opinions are sought.

Third, a number of "social profits" intended to represent different combinations and levels of these dimensions are prepared. These profits should be realistic and comparable to each other.

Fourth, the group preferences among alternative profiles and satisfaction with the level of social good represented by each profile are determined by asking the respondent to state a preference for one profile when the profiles are presented to him in pairs.

Fifth and last, the preference judgements are analysed to determine priority for the different social dimensions implied by the groups' preference judgements, and the satisfactions are analysed to determine the social good. This procedure is similar to the one used in the marketing field for determining consumer choices among alternative products. A group's utility for any profile is computed as the weighted sum of the attitudes of that profile. The higher the utility the more preferred is the profile.

Partial Social Audit/Aspect Audit

Aspect audit relates to the auditing of any particular aspect of social performance of a corporation, e.g., environment, energy conservation, human resource (or personnel) development etc. A company may undertake auditing of a particular aspect of its social performance because it considers that aspect to be of particular significance to it, or because its social activities for the time being are restricted to that particular aspect. A company may also initially begin with auditing of a specific aspect of its social activities, but may gradually extend the same to other areas.

In this type of auditing, we shall consider three types of audit viz., **environmental audit, energy audit,** and **human resource accounting.** We shall take all these three one by one.

Environmental Audit: In several developed countries, public opinion is quite vociferous about the objectionable practises of some firms who indulge in dumping of chemical wastes, releasing hazardous effluents in the rivers and seas, discharging toxic smoke in the air, etc. Public interest groups and press have been quite vocal in asserting that companies be subjected to environmental auditing. The Security Exchange Commission (SEC) in the USA has, from time to time, emphasised and enforced disclosure requirements in this respect and has subjected the companies to retain environmental consulting firms for complying with necessary audits. They are also required to disclose any material impact that compliance with environmental laws will have on capital expenditure, earnings, and the company's competitive position.

Environmental audit aims to verify or validate the compliance with environmental laws such as : Environmental Protection Act, 1986 and Water (Prevention and Control of Pollution) Act, 1974 in India to protect the environment. An internal group or a consultancy firm may prepare a report which would then be examined by an outside auditor as to the client's policies and procedures and monitoring of environment in accordance with the laws. The auditor's report may be positive or negative. Before audit report is given, the auditor may even visit the factories and other places to verify for himself the air (smoke) and water pollution, emissions, ground water contamination, observance of safety rules, release of toxic substances, etc.

Energy Audit: Energy audit is concerned with the reporting and disclosure of the results of conservation of energy in the manufacturing process and improvements in the efficient utilisation of energy for manufacturing products. Ever since the two world-wide oil shocks

(the third one was felt recently during the Gulf War), the attention of many countries has been focused on conservation of energy and development of renewable sources of energy.

As a result many companies have started the use of "energy audit" as part of the conservation efforts. The audit report may include information about direct and indirect sources of energy produced or consumed. Energy accounting has however still to overcome some difficulties of measurement etc.

In India, some form of energy accounting, not subjected to auditing as yet, is compulsory under Section 217 of the Companies Act 1956 and the Companies Disclosure of Particulars in the Report of Board of Directors Rules, 1988. The report about **conservation of energy** is divided into three parts: (a) Measures taken; (b) Improvements; and (c) Impact of measures taken and improvements. Further in part (d) the company is obliged to give particulars with regard to total energy consumption and energy consumption per unit of production.

Human Resource Accounting: Investors and other outside groups may be particularly interested in knowing whether the company's efforts have led to an increase or decrease in value of its most important resource, namely, human assets (or in its human capital formation). The conventional accounting neglects this aspects and all expenditures or outlays made on employee training and development are treated as expenses of that particular year in which they are incurred. It is worth noting that similar expenditures on physical assets are capitalised. It is therefore considered desirable to capitalise human resource expenditures which yield future benefits and reveal such measurements. This recognition has led to a new field of enquiry in accounting, known as *human resource* accounting.

Broadly speaking, human resource accounting is "the process of identifying and measuring data about human resources and communicating this information to interested parties." This definition implies three major objectives of human resources accounting: identification of "human resource value"; measurement of the cost and value of people to organisation; and investigation of the cognitive and behavioural impact of such information.

Many companies in the West have resorted to Human Resource Accounting. Empirical studies have shown that human resource accounting helps in building positive attitudes among the users of accounting information. Accounting for human assets conveys an explicit recognition that people are valuable organisational resources and are integral part of a mix of resources.

Just as physical assets are valued on the basis of their ability to render future economic services, individuals or groups of individuals may be valued on the basis of their present worth of services rendered to the organisation throughout an individual's or a group's expected service life. The question however is "How do we determine the value of human assets?" Two models have been proposed, one by Flamholtz and the other by Likert and Bowers. Further, while Hekimian and Jones have proposed opportunity cost method, Lev and Schawartz have suggested the use of a person's future compensation as a surrogate for his or her value. For an interesting discussion of the valuation methods, we suggest that you listen to the Audio Programme: "Emerging Horizons in Accounting and Finance: Human Resource Accounting" which was prepared for MS-4 (Accounting and Finance for Managers). A transcribed version of this audio programme is also available in the form of a 'reading' in a small booklet titled "Emerging Horizon in Accounting and Finance" which should be available in your study centre library. However, for your convenience we have reproduced the transcribed version in Appendix-II.

Comprehensive Audit

Comprehensive audit is all embracing kind of audit which extends to all the facets/activities of an organisation's behaviour. It reports on all aspects of accountability of corporate management. Comprehensive audit therefore would include in its scope financial auditing, management auditing, operational auditing, social auditing, etc.

Comprehensive audit was started in the public sector in Canada and the United States. Lately, it has also been extended to the private sector in these countries. In Canada, comprehensive auditing undertaken by the Auditor General includes a review of the economy, efficiency and effectiveness with which the Government has managed the resources placed at its disposal. It has been successfully applied to Canadian Government Departments and Agencies.

Comprehensive audit focuses on management systems rather than on the actions or events which are considered of secondary importance. It aims at assessing the quality of processes and information on which decisions or judgements are based.

It should be pointed out that due to all inclusive character of comprehensive audit, the significance of social audit may be somewhat diluted. The findings resulting from social audit may get submerged into the extensive results of comprehensive audit.

12.5 OBSTACLES IN SOCIAL AUDIT

There are several difficulties in conducting a social audit and there are several questions which have not yet been resolved: Social auditing is a new area which has developed over the last 10-15 years and is therefore still in infancy.

In a survey, about half of the responding companies indicated the "inability to develop measures of performance which everyone would accept" as the most important impediment in social auditing. The companies stated that the lack of universal acceptance of measures of social performance was the principal obstacle to the regular preparation of social audits.[14] Even in a simple method like inventorying of social activities, difficult questions relating to definitions may have to be faced. For instance, it is quite difficult for the people to define the social part of their jobs. Difficulty may also be experienced in splitting the "social" from the "good business" part of various activities.

Another obstacle in social audit is the resistance likely to come from the lower echelons of management. The process and the outcome of the audit might take up their time and disturb regular operations; expose the political and philosophic differences within the firm; and create anxiety that new standards of evaluation are being applied. The revelations of social audit may prove embarrassing to many an executive if exposed to the public either deliberately or unintentionally. Companies as a result are reluctant to make social audit reports public if the results are not favourable.

If the expenditure of long-term nature incurred by the management on social action programmes has an adverse impact on the profit and loss account, it might reflect adversely on the management's stewardship. However, it has also been argued that if nothing but laudatory reports come out, there is likely to be more of a credibility gap. Bauer says, "I do not think there is going to be any real credibility until companies start reporting things on which they are not doing so well." He urges the companies to "get on the learning curve", because he feels that the social audit would be in increasing demand.[15]

Two other main difficulties in measuring corporate social responsibility relate to: (i) lack of detailed information in quantitative monetary form regarding the social activities of an organisation, and (ii) the lack of availability of satisfactory methodology which would measure the full impact of the corporate activities on society. A corporate audit could be useful only if it measures an organisation's social performance in relation to the performance of the other organisations, both in the same industry as well as across different industries. Therefore the methodology must have a common framework to compare social performance across firms. This is indeed a difficult task.

In order to implement a social audit programme successfully it is necessary that a company is organisationally geared to the effort. According to Linowes, the company "must prepare itself to set into motion corporate machinery to (i) evaluate, quantitatively where possible, the social environment in which it functions; (ii) establish improvement objectives; (iii) make resource allocations in response to identified needs; and (iv) measure and evaluate corporate social involvement on an ongoing basis. However formidable this may seem, it is no more complicated than setting up the planning and support organisation for a new product line or for a marketing or manpower development programme. He further says, "it may be years before we can invent and use social measurement to evaluate social contributions with the confidence and relative precision with which we use economic and fiscal measurements. But we do have enough standards available in social areas so that we can begin now. However, considering the softness of much of the economic and fiscal data used today, as well as how these data often are misused, we could very well expect the results of social measurements, with all their present limitations, to be just as effective as

economic measurements. What we can do at once is to borrow from economics and apply the "system" of economic and fiscal measurement to social areas".[16]

It is true that specific standards, indicators and rules for preparing social responsibility reports do not exist and that there is no unanimity on several matters relating to social audit. Nonetheless, we cannot wait until specific guidelines or rules for all diverse situations are formulated. It would be like waiting for all the nation's economists to agree on the guidelines and rules governing the nation's economic presentation. Several approaches, methodologies, and types of audits have been suggested. A company can use any of the approaches found in the literature that we have discussed above or it can evolve its own approach. What is however needed is that the approach adopted is followed consistently. In course of time it would be possible to evolve industry-wise standards, formats, rules or guidelines which would enable intercompany comparisons within the same industry. It is advisable to keep the methodology of social reporting and auditing on a simple level rather than complicating it beyond practicability. The objective in social measurement should be to give visibility to the social performance of an organisation and make period-by-period and company-by-company comparisons within an industry.

Since social audit is likely to be in increasing demand, Bauer's advice seems pertinent in this context: "keep it simple enough that you can do it. Be reasonably sure that you are going to have a product that is going to be useful when you get through."

12.6 SOCIAL AUDIT IN INDIA

As far as India is concerned, there are virtually no disclosure requirements under the Companies Act with regard to social responsibility. Big investors like Church and Ford Foundation in the United States have not made their presence felt in India. Religious and other trusts in India are under legal obligation to invest only in Government securities and certain public enterprise channels. They are not allowed to invest in the private sector companies. Therefore, the question of raising social responsibility questions by such organisations in the Annual General meetings does not arise. Though there are some consumer protection or voice groups, they have not been able to exert much pressure, except in few stray cases. There is thus tremendous scope for increased participation by consumer and social groups in the area of corporate social responsibility.

As far as public sector is concerned, there are some watchdogs in the form of Public Accounts Committee, Committee on Public Undertakings, Consultative Committees to Ministries, etc. On the whole, it is believed that public sector undertakings have done a better job in discharging their social responsibility compared to private sector enterprises in the areas like: setting factories in remote, under developed areas; township building and maintenance; recreation; education; housing; and other employee welfare activities.

Though several companies in the private sector in India have started mentioning their activities in the area of social responsibility in their annual reports of the directors or in the statements of their Chairmen, no systematic efforts have been made in the presentation of social responsibility report or conduct of social audit. Tata Iron and Steel Company (TISCO) is the only company which has done some work in this area. In the Western countries various groups, which we have earlier referred, exercise considerable pressure on the companies to become more and more socially conscious. In India, there are no such great pressures. Therefore, the impact on the companies has been very little. The MIC gas leakage tragedy that took a heavy toll in Bhopal in the recent past is an example of the neglect of social responsibility by large business. The effluents discharged in the Arabian sea by Zuari Agro Chemicals Limited is another example. It is generally believed that the Bhopal tragedy was caused by a lack of regard for social goals by Union Carbide India Limited. This incident however has definitely created greater awareness in the public, press and government that large enterprises must do their business in a socially responsible manner. Similarly, Zuari Agro's discharge of toxic substances into the sea, it is believed, resulted in mass mortality of the fish, endangering ecology.

The committee set up to undertake social audit of TISCO examined the social and moral responsibilities of the company in five spheres: (i) customers; (ii) employees; (iii) shareholders; (iv) society; and (v) local community. The committee reviewed the work done by TISCO in qualitative terms and the expenditure incurred by the company on various

programmes. The committee did not attempt to establish any standards against which the performance of the company could be compared. It did not use any specific format for carrying out the audit. Based on their observations and discussions with the workers, union members, heads of the departments etc. at Jamshedpur and their visits to the nearby villages and mines, the social audit committee described at length what TISCO had done during the past ten years. The committee discussed the contribution of TISCO in Pollution Control, Employer-Employee Relations, Consumers, and Shareholders. Lastly, they described the activities of TISCO in the areas of Community Development, Social Welfare, Rural Development Programme and Obligations to Society. Nowhere have they tried to rate the company's performance or compare it with other firms/industries. Toward the end, they mentioned very briefly some of the inadequacies.[17]

In the public sector, Cement Corporation of India has been publishing "Social Accounts" in its annual reports since 1980. Its presentation is based on Abt's framework with suitable modifications.

Recently some attempts have been made to conduct social audit of some public enterprises by some students.[18] The approach followed by them, it is claimed, is a synthesis of two extremes, i.e, quantitative where an attempt is made to express costs and benefits in monetary terms on the one hand and a mere subjective description of social performance on the other. The methodology consists of the following steps:

i) Study the industry in which the company is operating and assign weights to each stakeholder group depending on the importance of social responsibility towards that particular group in that industry.

ii) Identify the factors and sub-factors on which social performance is to be measured for each of the group and assign the relative weights.

iii) Assess the performance of the company for each factor and/or sub-factor on a 7-point scale. (Point 1 on the scale means highly irresponsible behaviour, and 7 means highly responsible behaviour.)

iv) Aggregate the performance of the corporation for the various factors or dimensions and compute an overall score for the company.

The student researchers considered four groups of stakeholders relevant to Indian Petro-Chemicals Corporation Ltd. (IPCL) for which they conducted the audit, namely, employees, customers, government, and society. Each group is assigned an equal weight of .25. The important dimensions for each groups were identified, for example, the dimensions or factors identified in relation to customers were: product development; product attributes; service attributes; and product promotion. Each factor within the group was assigned a weight depending upon its importance. Similarly, the dimensions identified in relation to employees were: hygiene factors and satisfier factors, each of which was given a weightage of .5. The sub-factors for each of these two factors were further identified and given weightage as shown in Figure 12.

The social responsibility of IPCL was measured in the light of industrial and product market situation. Information regarding each group was collected from various sources, within and outside the company, and then, based on judgement, the company was given a weightage on 7-point scale for each factor and/or sub-factor. The overall corporate rating score on seven point scale worked out to 6.1 and the authors concluded, "IPCL was a socially conscious company". How the overall corporate social responsibility was computed is shown in figure 12.3.

Figure 12.2 : Social Audit of IPCL-Factors/Sub-factors for Various Dimensions

Group	Weight	Factor	Weight	Sub-factor	Weight
Employees	0.25	Hygiene	0.5	Salary & other benefits	0.4
				Organizational policies	0.4
				Working conditions	0.4
					1.0
		Satisfier	0.5	Growth	0.2
				Job-satisfaction	0.2
				Employer-Employee relationship	0.4
			1.0		1.0

Figure 12.2 (Continued)

Group	Weight	Factor	Weight	Sub-factor	Weight
Customers	0.25	Product development	0.3		
		Product attributes	0.3		
		Service attributes	0.2		
		Promotion	0.2		
			1.0		
Government	0.25	Tax payments & dividends	0.3		
		Adherence to rules & regulations	0.2		
		Other contributions to the economy	0.5		
			1.0		
Society	0.45	Environment & Ecology	0.4		
		Community Welfare	0.2		
		Rural Development	0.2		
		Charities and relief measures	0.2		
	1.0		1.0		

Source : See Reference No. 18, p.61

Figure 12.3 : Social Audit of IPCL-Overall Corporate Social Responsibility

Group	Weight	Score	Product
Employees	0.25	5.1	1.275
Customers	0.25	5.8	1.45
Government	0.25	7.0	1.750
Society	0.25	6.6	1.650
	1.00		6.125

Overall Corporate Social Responsibility Score = 6.125

Source: See Reference No. 18, p.93

Activity 3

Examine the pros and cons of the methodology followed by researchers in conducting social audit of IPCL.

Pros

1) .....

2) .....

3) .....

Cons

1) .....

2) .....

3) .....

12.7 FUTURE OF SOCIAL AUDITING

Measuring and reporting of social performance of a company is not an easy task. There are several matters which remain unsettled. However, as social responsibility accounting gains greater acceptance, standards and procedures of social auditing may be evolved and get more firmly established. With more positive attitudes developing in future, the development of techniques for measuring, recording, disclosing and verifying the social performance of a firm may get the much needed impetus. The change in values of managers from being presently restricted to the profit motive to the promotion of social goals will contribute to development of further work in this area. The ideological transformation of managements would facilitate extensive use of social audit.

To what extent society and its institutions exert pressure on firms to undertake social programmes will also be an influeneing factor. If a company evaluates its managers both on

the basis of financial results as well as on the basis of their social performance, it will strengthen the social responsibility movement. However, before the widespread use of social audit becomes a reality, the obstacles generally confronted by the firms which undertake social audit will have to be overcome. One of these obstacles, as we have noted earlier, relates to the possible dangers faced by the company in publishing the results of social audits. Lack of consensus on the scope of social audit (i.e. what activities would be covered), lack of availability of methods to organise information, difficulty in making creditable cost-benefit analysis as a guide to actions, and inability to develop widely acceptable measures of social performance are some of the important hurdles in the wider use of social audit.

Despite the difficulties of measurement and despite the fact that a statement prepared for social audit may not be complete is not sufficient reason to delay any further preparation and use of social accounting and social audit.

12.8 SUMMARY

Corporate business has become an integral part of the functioning of the society. It is therefore expected that business should not adversely affect the life of the community in which it operates. The firms that recognise this fact and conduct their operations in a socially responsible manner are likely to flourish and succeed in the long run.

Social audit is, more or less, a formal device for judging how a corporate entity has implemented its social policy and programmes. It aims to measure, verify and report the effects of organisational behaviour on various interested groups or community in general.

It is in the interest of organised business to undertake social audit for it would help the management to determine areas where the firm could be vulnerable to public criticism. It would offset irresponsible appraisal or audit done by outside agencies, not fully informed of social actions or intentions of the corporation. Social audit imparts a social orientation to the general thinking of managers and managerial decision-making.

Depending upon the social objectives, scope and methodologies adopted, various types or frameworks of social audit have been proposed in the literature. However, all these frameworks can be divided into seven categories: Social Process (or Programme Management) Audit, Financial Statement Format Audit, Social Indicators Audit, Corporate Rating Audit, Constituency Group Audit, Aspect Audit, and finally, Comprehensive Audit. ***Social Process Audit*** attempts to explain what a company is doing through its social programmes. The goals and rationale of social programmes and the activities and operations undertaken under those programmes are described. However, what has not been done or the harmful effects of a firm's actions or inactions are ignored in such an audit.

In the ***Financial Statement Format Audit***, as the name itself suggests, social information, alongwith financial information, is presented in the conventional financial statement format i.e., balance sheet and/or income statement. Two models are well-known, one proposed by Abt Associates and other by Linowes. Under the former, the balance sheet, apart from financial assets and liabilities, includes a list of social assets, and a list of social commitments, liabilities and equity. The income statement, apart from financial incomes and expenses, includes social benefits and social costs and the net income provided by company operations to the staff, community, general public and clients. Under Linowes' model, a Socio-Economic Operating Statement (SEOS) is prepared which is restricted to expenditures undertaken voluntarily to improve the welfare of the employees, the public, the environment, and the product safety. All such expenditure are known as improvements. Against the improvements are offset expenditures which the management ought to have incurred but were ignored. Such costs are known as detriments. There are some inherent difficulties with social audits prepared in conventional financial accounting formats. It may be difficult to estimate monetary value of social benefits and costs.

Macro-Micro Social Indicator Audit attempts to measure and evaluate the company's performance (micro indicators) against a set of macro level indicators. The purpose being to judge the social performance of a firm in the backdrop of national or social policies and endeavours of the government. However, the macro social indicators may be difficult to

evolve. Further, their representative character may be questioned. Their relative importance may also change from time to time.

Corporate Rating Approach, usually adopted by consumer interest groups, social welfare organisations, public trusts with large investible funds, or media, attempts to rate or rank various business firms on the basis of criteria chosen and publicised by them. The main purpose in conducting such an audit is to educate the general public or to develop information for their own use.

Under the ***Constituency Group Audit*** the preferences and attitude or various stakeholders are first identified and measured. The performance of the firm against the criteria developed for each group is then assessed and evaluated. An overall measure of performance of an organisation may also be computed on an ongoing basis.

Partial Social Audit concentrates on any particular aspect of social performance, viz., energy conservation, technology absorption, environmental preservation or human resource development. In contradistinction to partial audit, ***Comprehensive Audit*** as the name suggests, attempts to measure, verify and evaluate the total performance of the organisation and this includes its social performance as well. Comprehensive audit, however, is an ambiguous concept and it is difficult to define its boundaries precisely.

Since social audit is a new and emerging area, there are several questions relating to its scope, measurement and standards for evaluation which remain unresolved. Besides conceptual difficulties, there are some practical difficulties in its adoption and implementation. A firm undertaking social audit may become prone to irresponsible criticism, inside and outside, and may, at times, incur embarrassment for itself and its managers.

In India, social pressure groups are not as strong as they are in some Western countries. As a result, social responsibility movement is still in its infancy. Nonetheless, it is widely believed that public enterprises in general have done a better job in performing their social responsibility. Some large companies in the private sector have also done a commendable job in undertaking useful social programmes and activities for their various constituent groups and for the public in general. Barring a few exceptions, social audit as a technique for measuring and reporting social performance of the organisation has not gained much use in India so far.

With social responsibility, however, gaining wider ground over time, social audit is likely to become more popular. And with this, the development of standards for social audit and techniques etc. are also likely to become more refined. Thus the growth of social audit is linked with the growth of social responsibility movement.

12.9 KEY WORDS

Social audit: The measurement, evaluation, verification and reporting of performance of the organisation in the area of social responsibility.

Social process audit: A type of audit under which the goals and rationale of social programmes and the activities undertaken in those respects are explained.

Abt Associates' Audit: A framework under which a balance sheet and an income statement are prepared on conventional lines. Apart from financial assets and liabilities, social assets and liabilities are also shown on the balance sheet. Similarly, on the income statement, social benefits and social costs are also shown in addition to usual incomes and expenses.

Socio-Economic Operating Statement (SEOS): A statement which, in addition to usual income and expenses, also shows expenditures *voluntarily* undertaken to improve the welfare of the employees and the public.

Macro-Micro Social Indicator Audit: A type of audit under which micro level social performance indicators are compared with the macro level social indicators in order to form a judgement about the social performance of an organisation.

Corporate Rating (or Social Performance Audit): A framework under which the performance of a firm is ranked on the basis of certain criteria adopted and announced by the agency performing the audit.

Constituency Group Attitude Audit: A type of audit which attempts to identify and prioritise the preferences of the various constituent groups interested in the firm and then seeks to assess its performance.

Environmental Audit: A type of audit which seeks to verify or validate the compliance with various environmental laws.

Energy Audit: An audit under which the results of the firm's efforts to conserve energy and improve its utilisation are reported or disclosed.

Human Resource Accounting: The process of identifying and measuring data about human resources and communicating information to interested people.

Comprehensive Audit: An all inclusive kind of audit which extends to all the activities of the organisation—financial, economic, and social.

12.10 SELF-ASSESSMENT QUESTIONS

1) Give some definitions of social audit and then compare these definitions in terms of their main focii. Give in your own words your understanding about social auditing.

2) Why is it considered desirable for business firms to undertake social audit?

3) "Social audit exposes a firm to considerable risk" Discuss.

4) What is Social Process Audit? Examine its merits and demerits.

5) Compare Abt's and Linowes' approaches to social auditing. Which one you think is more desirable and why?

6) a) Compare Abt's "social balance sheet" with a standard balance sheet. How is it different? How is it similar?
   b) Is the Abt's statement more informative to you than a regular statement? If so, in what specific ways?

7) What is Corporate Rating approach to social auditing? Discuss its limitations.

8) Explain Macro-Micro Social Indicator audit and examine its limitations.

9) What is Constituency Group Social Audit? Discuss the difficulties usually faced in this type of audit.

10) Compare partial (aspect) audit with comprehensive audit. What types of social aspect audits can be undertaken by a firm?

11) Discuss the status of social audit in India. Why social audit in India has not made much headway?

12) What appears to you the future of social auditing and reporting? What steps would you suggest for making social auditing more popular?

12.11 FURTHER READINGS

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APPENDIX 1

ABT ASSOCIATES INC.: SOCIAL AND FINANCIAL BALANCE SHEET 1973

Assets		1973		1972
1.	**Staff Assets**			
	Staff Available Within One Year (note 1)	$ 6,384,000	$	4,166,000
	Staff Available After One Year (note 1)	15,261,000		12,567,000
	Training Investment (note 2)	2,051,000		971,000
		23,696,000		17,704,000
	Less Accumulated Training Obsolescence (note 2)	503,000		248,000
	Total Staff Assets	$ 23,193,000	$	17,456,000
2.	**Organizational Assets**			
	Creation and Development of Organization			
	Research (note 3):	$ 437,000	$	352,000
	Child Care (note 4)	7,000		7,000
	Social Audit (note 4)	32,000		18,000
	Total Organizational Assets	$ 476,000	$	377,000
3.	**Use of Public Goods**			
	Public Services Paid For Through Taxes (Net of Consumption) (note 5)	$ 365,000	$	160,000
4.	**Financial Assets (note 9)**			
	Cash	$ 91,000	$	365,000
	Accounts Receivable, Less Allowance for Doubtful Accounts	2,083,000		1,285,000
	Unbilled Contract Costs and Fees	1,789,000		1,539,000
	Other Current Financial Assets	42,000		46,000
	Other Long-Term Financial Assets	39,000		89,000
	Total Financial Assets	$ 4,044,000	$	3,324,000
5.	**Physical Assets (note 9)**			
	Land	$ 310,000	$	307,000
	Buildings	1,710,000		1,737,000
	Improvements	222,000		152,000
	Equipment, Furniture and Fixtures	242,000		137,000
		2,484,000		2,333,000
	Less Accumulated Depreciation	204,000		111,000
		2,280,000		2,222,000
	Office Building Under Construction	225,000		-
	Total Physical Assets	$ 2,505,000	$	2,222,000
	Total Assets	$ 30,583,000	$	23,539,000

Liabilities and Equity		1973		1972
1.	**Staff Liabilities**			
	Staff Wages Payable (note 6)	$ 23,193,000	$	17,456,000
2.	**Organizational Liabilities**			
	Organizational Financing Requirements (note 7)	$ 563,000	$	351,000
3.	**Public Liabilities (note 8)**			
	Environmental Resources Used Through Pollution:			
	Paper	$ 11,000	$	5,000
	Electricity	76,000		41,000
	Commuting	37,000		20,000
	Total Public Liabilities	$ 124,000	$	66,000
4.	**Financial Liabilities** (note 9)			
	Notes Payable (Short Term)	$ 514,00	$	1,112,000
	Accounts Payable	1,081,000		539,000
	Accrued Expenses	875,000		596,000
	Federal Income Taxes	109,000		78,000
	Deferred Federal Income Taxes	52,000		35,000
	Notes Payable (Long Term)	1,092,000		757,000
	Leasehold Interest in Property	128,000		127,000
	Total Financial Liabilities	$ 3,851,000	$	3,244,000

Stockholders' Equity (note 9)		
Common Stock	$ 295,000	$ 295,000
Additional Paid-In Capital	1,491,000	1,491,000
Retained Earnings	912,000	516,000
Total Stockholders' Equity	$ 2,698,000	$ 2,302,000
Society's Equity		
Society's Equity Generated by Increases (Decreases) in Net Social Assets (note 10)	$ 154,000	$ 120,000
Total Liabilities and Equity	$ 30,583,000	$ 23,539,000

Note 1
Company staff is considered a social asset. Valuation of the asset is based on year-end payroll, discounted to present value, the discount rate being a function of mean staff tenure (averaged over previous years) and salary profiles over time. Discount rate for 1973 was 9604 for staff available within one year (1972: 9634) and 2,296 for those available after one year (1972: 2.906), based on a mean staff tenure of 3.8 years (1972: 4.6 years).

Note 2
Training investment has been estimated from a staff survey conducted in January 1974. 1973 training expenditures, identified in the Social and Financial Income Statement, have been added to the 1972 balance. Training obsolescence is based on a straightline depreciation of training investment over the mean staff tenure.

Note 3
Creation and development of organization is equated to the replacement cost of paid-in capital, computed by weighing the capital stock account from 1965 (the year of the company's founding) to the present by the deflator for Gross Private Fixed Investment. The replacement cost of total paid-in capital less actual cost constitutes a social asset.

Note 4
Investments in research in childcare and the social audit by the company accrue as a social asset

Note 5
Taxes paid by the company are considered a social contribution or benefit, while public service consumed by the company are considered social costs. When the company does not consume public services equal to taxes paid, a net social asset is produced. The Change in this asset from 1972 to 1973 is equal to the difference between the value of public services consumed and total taxes paid, as identified in the Social and Financial Income Statement.

Note 6
This amount does not constitute a liability in the legal sense. It is a liability contingent upon future Utilization of staff on contract or administrative tasks.

Note 7
The company's financing requirements are considered to be on opportunity cost to society. This cost is equated to the difference between mean borrowing during the year and year-end borrowing.

Note 8
The use of environmental resources through pollution generated by company operations is considered a cumulative social liability. The change between 1972 and 1973 figures is equal to the social costs identified in the Social and Financial Income Statement.

Note 9
Financial and physical assets, financial liabilities and stockholders' equity are items conventionally accounted for. The individual line items are the same as in the Financial Balance Sheet; they have been rearranged and rounded off for integration into the social balance sheet.

Note 10
Society's investment in the company is created by recognizing the difference between the net increase in the value of social assets and social liabilities.

Note 11
Conventional financial accounting fails to adjust for public services flowing from society to the corporation. These public service constitute a social cost, corresponding to on "invisible subsidy" to the company—which is offset by conventionally accounted tax payments. Federal and state public services consumed by the company are calculated by multiplying the ratio of company revenues to total federal or state corporate revenues times the total of federal or state corporation tax collections. The company's share of local services consumed is computed by multiplying the ratio of the average daily work force of the company to total local population by total local taxes, subtracting the share of the local budget going to education (30.6% in 1973; 29% in 1972) since the staff does not use local public education.

Note 12
In its operations, the company contributes to the degradation of environmental resources through pollution. The cost of pollution abatement is considered analogous to public services provided by society.

Note 13
The company consumed 1,723,593 kWH of electric power in 1973 and 1,542,524 kWH in 1972. The cost of abatement of air pollution created by the production of this power is estimated at $.02 per kWH.

Note 14
The company generated 1,727,440 commuting trip miles in 1973 and 783,750 miles in 1972 (3,622 and 3,438 per

staff member, respectively). The cost of abatement of air pollution caused by automobile commuting is estimated at $.01 per mile.

Note 15
A substantial portion of the company's activities are expressed in tangible form through the printed word. The company used 170 tons of paper in 1973 and 102 tons in 1972. The cost of abatement of water pollution created by the manufacture of this paper is estimated at $35 per ton.

Note 16
The most significant development in the company has been the increase in staff. Total number of employees (in annual average full-time equivalents) increased from 228 in 1972 to 477 in 1973. This increase is reflected in the totals reported in the social and financial income statement. Figures are therefore reported in terms of per employee in the footnotes to clarify qualitative developments.

Note 17
Total annual payroll has been broken down into pay for time worked, vacation and holidays, and sick leave. As a cost to the company, salaries for time worked have been broken down further into compensation for work and training investment (see Note 21).

Abt Associates, Inc.
Social and Financial Income Statement 1973*

Benefits (Income)		1973		1972
1.	**To Company/Stockholders**			
	Contract Revenues and Other Income	$ 15,224,000	$	6,995,000
	Federal Services Consumed (note 11)	195,000		129,000
	State Services Consumed (note 11)	80,000		46,000
	Local Services Consumed (note 11)	32,000		22,000
	Environmental Resources Used Through Pollution (note 12)			
	Electricity (note 13)	35,000		31,000
	Commuting (note 14)	17,000		10,000
	Paper (note 15)	6,000		4,000
	Total	$ 15,589,000	$	7,237,000
2.	**To Staff** (note 16)			
	Salaries for Time Worked (note 17)	$ 5,399,000	$	2,688,000
	Career Advancement (note 18)	602,000		332,000
	Vacation and Holidays (note 17)	571,000		298,000
	Health and Life Insurance (note 19)	361,000		140,000
	Sick Leave (note 17)	127,000		53,000
	Parking (note 20)	124,000		59,000
	Food Services (note 21)	51,000		24,000
	Quality of Work Space (note 22)	16,000		25,000
	Child Care (note 23)	11,000		5,000
	Credit Union (note 24)	8,000		4,000
	Total	$ 7,270,000	$	3,628,000
3.	**To Clients/General Public**			
	Value of Contract Work at Cost (note 36)	$ 15,224,000	$	6,995,000
	Staff Overtime Worked but not Paid (note 36)	1,056,000		883,000
	Federal Taxes Paid by Company	349,000		272,000
	State and Federal Tax Worth of Net Jobs Created (note 37)	327,000		127,000
	State Taxes Paid by Company	100,000		62,000
	Contributions to Knowledge (Publications) (note 38)	54,000		18,000
	Total	$ 17,110,000	$	8,404,000
4.	**To Community**			
	Local Taxes Paid by Company	$ 63,000	$	71,000
	Local Tax Worth of Net Jobs Created (note 39)	52,000		40,000
	Environmental Improvements (note 40)	18,000		22,000
	Total	$ 133,000	$	133,000

Costs (Expenditures)		1973		1972
1.	**To Company/Stockholders**			
	Salaries Paid (Exclusive of Training Investment and Fringe Benefits) (notes 17,25)	$ 4,319,000	$	2,150,000
	Training Investment in Staff (notes 17, 25)	1,080,000		538,000
	Direct Contract Costs (note 26)	5,596,000		1,921,000
	Overhead/General and Administrative Expenditures not Itemized (note 26)	1,649,000		925,000
	Vacation and Holidays (note 17)	571,000		298,000
	Improvements, Space and Environment (note 27)	384,000		151,000
	Federal Taxes Paid (note 26)	349,000		272,000

	Health and Life Insurance (note 19)	201,000	96,000
	Sick Leave (note 17)	127,000	53,000
	State Taxes Paid (note 26)	100,000	62,000
	Local Taxes Paid (note 26)	63,000	71,000
	Food Services (note 21)	51,000	24,000
	Child Care (note 27)	11,000	5,000
	Company School and Tuition Reimbursement (note 28)	2,000	1,000
	Miscellaneous and Public Offering of Stock (note 26)	154,000	23,000
	Interest Payments (note 26)	171,000	107,000
	Income Foregone on Paid-In Capital (note 29)	276,000	276,000
	Total	$ 15,104,000	$ 6,973,000
2.	**To Staff**		
	Opportunity Costs of Total Time Worked (note 30)	$ 6,455,000	$ 3,571,000
	Absence of Retirement Income Plan (note 31)	58,000	43,000
	Layoffs and Involuntary Terminations (note 32)	31,000	15,000
	Inequality of Opportunity (note 33)	11,000	26,000
	Uncompensated Losses Through Theft (note 34)	1,000	1,000
	Total	$ 6,556,000	$ 3,656,000
3.	**To Clients/General Public**		
	Cost of Contracted Work	$ 15,224,000	$ 6,995,000
	Federal Services Consumed (note 11)	195,000	129,000
	State Services Consumed (note 11)	80,000	46,000
	Environmental Resources Used Through Pollution (note 12)		
	Electricity (note 13)	35,000	31,000
	Commuting (note 14)	17,000	10,000
	Paper (note 15)	6,000	4,000
	Total	$ 15,557,000	$ 7,215,000
4.	**To Community**		
	Local Services Consumed (note 11)	$ 32,000	$ 22,000
	Total	$ 32,000	$ 22,000
Net Income			
1.	To Company/Stockholders: Financial	$ 396,000	$ 298,000
	Social (note 41)	89,000	(34,000)
2.	To Staff (note 42)	714,000	(28,000)
3.	To Clients/General Public	1,553,000	1,189,000
4.	To Community (note 43)	99,000	111,000
	Total Net Social Income	$ 2,455,000	$ 1,238,000
	Total Net Social and Financial Income Generated by Company Operations	$ 2,851,000	$ 1,536,000

Note 18
Career advancement is expressed as the added earning power from salary increases for merit or promotion. The annualized salary increases in 1973 amounted to $602,000, as compared to $332,000 in 1972; the average increases per employee were $1,262 in 1973 and $1,456 in 1972.

Note 19
The value of health and life insurance provided by the company is assumed to be equal to the cost of purchasing comparable coverage individually by full-time staff. For each dollar spent, the company generates $1.80 of benefits per employee. Benefits per employee amount to $757 in 1973 and $614 in 1972.

Note 20
The company offers free parking to employees at all its locations. This constitutes an "invisible income" to staff, corresponding to the saving in terms of parking costs over alternative locations. Free parking privileges are assumed to be worth $30 per month. Benefits per employee have remained virtually unchanged(1973: $260. 1972: $259).

Note 21
The company subsidizes the operation of food services on its premises, in the interest of work efficiency and staff congeniality, saving the time and public resources otherwise needed to commute to other eating facilities. The average value of subsidies per employee has inceased slightly from $105 in 1972 to $107 in 1973.

Note 22
The company provides its employees with floor space exceeding industry standards (average of 90 square feet/employee). The value of actual square footage in excess of industry standards has been estimated at $6.50/square foot. As a result of company employment growth, the average benefit per employee has decreased from $111 in 1972 to $33 in 1973.

Note 23
The company subsidizes the operation of a day-care center on its premises, in the interest of working parents of pre-school children. The average value of subsidies per employee has remained stable (approximately $22.50).

Note 24
The Abt Associates Employees Federal Credit Union provides benefits to staff in the form of lower interest rates for loan and higher dividends for deposits than commercially available. The value of these benefits has been estimated at $8,000 for 1973 and $4,000 for 1972. The average benefit per employee has been approximately $18 for both years.

Note 25
The staff survery indicates that company employees spend on average 20% of their time in training, decreasing from a high of 25% during the first year to about 15% by the fourth year. This percentage has been applied to total salaries for time worked to delineate training investment.

Note 26
Figures have been taken from the financial income statement, adjusted for itemized expenditures.

Note 27
Actual expenditures on building maintenance.

Note 28
The company encourages employees to take courses at local universities related to the work performed by offering a 50% tuition subsidy to qualified staff.

Note 29
"Income Foregone on Paid-In Capital" has been estimated as the opportunity cost to stockholders of having paid-in capital tied up in the company. The opportunity cost is equivalent to the expected return on an investment in a medium-risk venture, estimated at 12%.

Note 30
The opportunity cost of work to staff is equivalent to salaries received for regular working hours plus the value of overtime worked but not paid.

Note 31
Currently, the company does not offer retirement income to its employees. In the staff survey conducted in January 1974, 73% of the respondents indicated a strong interest in a retirement income plan its absence therefore constitutes an opportunity cost to staff in terms of benefits routinely available in other employment. The average annual cost of purchasing a standard retirement income plan outside the company has been estimated at $1,935. For 1973, 30 employees were eligible for a standard retirement income plan, compared to 22 in 1972.

Note 32
The cost of layoffs and involuntary terminations to staff is estimated to be one month's salary to each terminee, based on the assumption that the mean time to next employment is one month. The average cost per employee has decreased slightly from $66 in 1972 to $65 in 1973, as has the percentage of employees involuntarily terminated from 6.9 to 6.5 percent.

Note 33
Inequality of opportunity is defined in terms of the costs to individuals of the income loss equal to the difference between what the minority or female individual earns and what a non-minority or male individual doing the same job with the same qualifications earns. The social cost of inequality of opportunity was incurred entirely by women, as a result of a strongly discriminatory labour market that company policy was not completely able to overcome within national wage-price constraints. However, company efforts in 1973 led to an absolute decrease in the total cost of the inequality of opportunity from $26,000 in 1972 to $11,000 in 1973, corresponding to a decrease in the per-employee cost from $114 in 1972 to $23 in 1973.

Note 34
Prior to the establishment of security measures, employees have suffered losses through theft of personal property. In some instances, employees were not reimbursed for such losses. This cost per employee was reduced by half in 1973.

Note 35
A survey of clients indicated that the evaluation of contract value at cost understates the true value to the general public of the work performed by the company. Clients estimated that the actual value of contracts exceeded cost by a factor of up to nine. However, the response rate for this survey was insufficient for reliable statistical estimates of the actual value of assets on one side and a list of the social commitments, liabilities, and equity on the other side. The income statement would include the social benefits, the social costs, and the net social income provided by company operations to the staff, community, general public, and clients. To illustrate the proposal, Abt Associates sponsored a social audit of its own activities and disclosed the results in the annual reports for 1971, 1972, 1973, and 1974. An example of Abt's social audit is shown in Exhibit 9.2. As may be seen in the exhibit, the intent of Abt's social audit is to quantify and assign a dollar figure to all social impacts. In fact, Clark Abt, the president of Abt Associates, reports.

> The basic concept used in the social audit to measure social benefits and costs to employees, communities, clients, and the general public is adopted from accounting practice. A thing is assumed to be worth what is paid for it, or what it costs, or the value received from it. This practice assumes all social impacts such as health, security, equality, environment, etc., can be expressed in terms of the money the people concerned have actually paid for the benefits or services, and what they have actually paid to avoid equivalent costs.[15]

The proposal of David F. Linowes, a certified public accountant, is similar in format to the Abt proposal but differs in content by being restricted to expenditures undertaken voluntarily to improve the welfare of employees and the public, product safety, or environmental conditions. The expenditures required by law or union contract

are not included because they are perceived as both mandatory and necessary costs of doing business.[16] Several rules are proposed that help to identify socio-economic items to be included into the socio-economic operating statement (SEOS) as follows:

- If a socially beneficial action is required by enforceable law and regulations, it is not included on a SEOS statement.
- If a socially beneficial action is required by law, but is ignored, the cost of such item is a "detriment" for the year. The same treatment is given an item if postponed, even with governmental approval.
- A prorated portion of salaries and related expenses of personnel who spend time in socially beneficial actions or with social organizations is included.
- Cash and product contributions to social institutions are included.
- The cost of setting up facilities for the general good of employees or the public, if done without union or government requirement, is included.
- Expenditures made voluntarily for the installation of safety devices on the premises or in products and not required by law or contract are included.
- Neglecting to install safety devices which are available at a reasonable cost is a "detriment".
- The cost of voluntarily building a playground or nursery school for employees and/or neighbours is included. Operating costs of the facility in each succeeding years are also included. Contracts to clients or the general public. The figures reported indicate a slight increase in contact value per employee ($32,000 in 1973 vs. $31,000 in 1972).

Note 36
The 1972 social audit showed an average overtime for professional staff of 33% over regular working hours. Partially in response to that finding, reduction of excessive overtime become company policy. The 1973 staff survey showed a decrease of overtime to 20% of regular working hours. The monetary value of unpaid overtime per employee decreased from $3,873 in 1972 to $2,214 in 1973. The total value of overtime constitutes an "invisible subsidy" of clients on the general public by company staff.

Note 37
The expansion of the company has credited 218 additional jobs. The tax value of these additional jobs for the federal and state governments has been computed as 20% of the average starting salary of $12,000, weighted by the proportion of a full year that these (net) new jobs have been effective.

Note 38
Publications by company staff constitute additions to the stock of social knowledge. These contributions are evaluated at the average market rate for similar publications. The average value per employee increased from $79 in 1972 to $113 in 1973, reflecting an increase of publications from one for every fourth employee to one for every third employee.

Note 39
The local tax worth of net jobs created has been computed as the additional revenue to the community in terms of sales taxes, excise taxes on cars, and real estate taxes for private homes.

Note 40
The company contributed to aesthetic improvements of the environment through landscaping ($8,000 in 1973) and the paving over of a dirt lot for a parking lot (rental value of 1973: $10,000). These improvements constitute a benefit to the community.

Note 41
The 1972 net social loss to the company/stockholders results from the relatively high opportunity cost of paid-in capital which was not entirely offset by social contributions to the operations of the company.

Note 42
The change from a net social loss to staff in 1972 ($123 per employee) to a social gain in 1973 ($1,497 per employee) is largely a result of the company's success in decreasing the extent of overtime worked but not paid. In addition, this change reflects improvements in the social efforts by the company.

Note 43
The slight decrease in the net social income to the community can be attributed to the fact that physical improvements (news building, landscaping) following the employment expansion of the company have begun late in 1973 and will therefore become effective in 1974 only, while the social costs of increased use of public services from the expanded staff have been immediate.

Source : Belkaoui, Ahmed, 1984, Socio-Economic Accounting, Quorum Books, Westport, et al. pp.269-276.

APPENDIX II

HUMAN RESOURCE ACCOUNTING*

MLB: What is Human Resource Accounting? How it has been defined?

KR: Let us take a few definitions of Human Resource Accounting (HRA). According to the American Accounting Association, HRA is "a process of identifying and measuring data about human resource and communicating this information to interested parties". Eric Flamholtz calls it "Accounting for people as an organisational resource. Human resource accounting is the measurement of the cost and value of people for an organisation". Basically, HRA is an information system that tells management what changes over time are occurring to the human resources of the business.

These definitions recognise that so far as accounting is concerned, the attempt is to cost and value human resources like other assets.

MLB: So HRA is a process of identifying and measuring data about human resources. But why should we measure our human resources as I believe most modern or progressive managements do realise the importance of human resources in their organisations?

KR: Yes, you are perhaps right, but there are three reasons which have brought this area into added focus in recent times? Firstly, skilled manpower is scarce and is becoming scarcer, the statistics on unemployment notwithstanding. Secondly, the costs of recruitment, training, placement, career development and welfare benefits are growing day by day. Thirdly, though the balance sheet and linked schedules contain detailed information of investments in plant and machinery, land and buildings, transport and office equipment, there is no formal record of investment in employees, though we ritually acknowledge that "our greatest asset is people" and that "people after all, are the company". There is a universal lack of data on "people costs" which can be used as a basis for decision on investments in human resources or for incorporation in the annual report by way of information.

MLB: But does not it look odd to treat employees as assets?

KR: Let us examine whether "employees" are assets in the accountant's terminology. An "asset" in the strict accounting sense is a resource of immediate or future use to the company, is measurable in monetary terms, and is owned by the company. Though employees cannot be owned like other property, they are without doubt a useful resource. HRA is an attempt to measure their value in monetary terms.

MLB: That employees are valuable resources cannot be denied but how do we recognise this value, I mean, are there any definite market indicators of this value?

KR: As we earlier noted, there is no doubt that the collective experience, skill and abilities of employees in an organisation enhance its future income earning potential. That they have value and that they enhance networth is obvious from the fact that there is always a big difference between the break-up value of assets and the "going concern" values. Although this value is not recorded on the balance sheet, it is implicitly recognised by the investing community, as demonstrated by the fact that the market places a higher value on a successful company. The stock exchange valuation of its issued shares is generally much higher than the net worth as reported in the accounts, i.e. "assets minus liabilities". This difference is due to the fact that the market value takes into consideration all resources available to the company, including, inter alia, the inherent value of its human resources. Similarly, when one company purchases another, it frequently pays a price well in excess of the net worth shown in the books. This premium represents the purchasing company's assessment of the value of intangible assets and resources not recorded on the balance sheet. Such assets include management abilities, operator skills, customer loyalty, reputation, etc. The value of such assets is recorded by the purchasing company under "goodwill". Such goodwill in many cases would include a substantial portion of the assessed value of the human resources.

MLB: If we treat human resources as assets then how do we value them, i.e. what method do we employ?

KR: The existing accounting conventions and practices do not provide for measuring or indicating the value of this asset in financial reports except to the extent that it is included in goodwill. Various methods have been explored in recent years with the objective of expressing the value of human resources as a capital investment. We briefly discuss four methods here.

The first is based on Historical Cost. In this method the unexpired portion of costs for recruiting, training, familiarisation and development of the employees forms the basis of valuation. Once this opening balance value is established, the concepts of appreciation and depreciation can be applied in line with the practice used for fixed assets. There will thus be a proper matching of costs and revenue.

The second method is based on Replacement Cost. In this method an estimate of the cost of replacement of the existing personnel under the existing organisational conditions is made which forms the basis of valuation. In this context, Rensis Likert suggests a basis for determining the value of the total human resources. This basis is nothing but asking a simple question: What would be the cost of a similar organisation if it were to be created from scratch? The cost resulting from this exercise will be the value of the human resources.

MLB: But don't you think that it will be difficult to operationalise this idea?

KR: Yes, it is almost impossible to make a valuation in actual practises based on identical replacement. Further, such valuation will be largely subjective.

MLB = Dr. M.L. Bhatia

KR = Mr. K. Ramachandran

*Source: Emerging Horizons in Accounting and Finance, An IGNOU Publication, 1988, pp. 9-12.

MLB: What is the third method?

KR: The third method is the Present Value method. Under this method we estimate the discounted v future net contributions of personnel or human resources to the earnings of the company. Three have been developed in this area: (a) The Lev and Schwartz Model, (b) Eric Flamholtz Model, (c) Jaggi-Lau's Model. The first is based on the assumption that the employee will stay with the retirement. The second one relaxes this unrealistic assumption and tries to estimate the probabil expected stay of each employee with the firm at different stages of service. The third model intr "group" as the basis of such calculations based on historical data regarding employee movemen The fourth method is the Human Asset Multiplier method. Under this method we estimate the c of human resources by applying a multiplier to current salaries and wages. All expenditure rele in a particular category, such as recruitment and training would be capitalised as also losses in t wastages, redundancies, transfers and retirement by the application of the appropriate human as multiplier. The asset multiplier is derived from the price/earnings ratio, i.e. the current market p shares divided by earnings per share on the basis of latest reported data of the company. This ap based on the familiar technique employed for assessing the "going-concern" value of a business whole.

MLB: But I think the multiplier factor is difficult to determine?

KR: Yes, this is the disadvantage of this method. The results would be unduly sensitive to the vagari exchange prices. Second, this method is based on the assumption that in any employment situat person, job or category of jobs can be given a discrete multiple and this multiple can be applied an asset value.

MLB: It appears to me that whichever method you choose, there is bound to be some element of subje the valuation of human assets, I mean to a lesser or greater degree.

KR: Yes, it is expected that the valuation of intelligent, skilled human beings as an asset will to a lar be subjective. What is being attempted is the establishment of a scale of values which will be g accepted. Consider the analogy of a property surveyor and an estate agent in this connection. Th surveyor prepares the detailed costs of the constituent elements of the building, e.g. the concrete wood work, etc. by the use of recognised measurement techniques and comes up with the summ the structure but with little or nothing about its value. The estate agent, on the other hand, asses value more with reference to subjective criteria like the amenities which the building offers, its current sale value, etc. There is a considerable element of personal judgement based on experie valuation. It may not be free from errors of judgement but the scale of property values given by agents and professional valuers are accepted as a basis for commercial transactions. What Hum Resource Accounting seeks to do is only to establish a scale of values which will be generally a

MLB: What are the applications or uses of HRA?

KR: HRA has many applications. Among its many applications are:

No. 1: We can measure the return on capital employed on total organisational assets, including of human assets.

No. 2: We can plan the use of resources, including human resources.

No. 3: The disposition of resources can be examined. By allocating relative human asset values different job grades, the location of organisational investments in human resources woul highlighted.

No. 4: HRA helps in examining expenditure on personnel and in reappraisal of expenditure on services and training.

No. 5: HRA is useful in preparing organisation and personnel profiles, so as to plan the desired and disposition of human assets.

No. 6: HRA is helpful in valuing businesses where the human asset value becomes a relevant f mergers and takeover decisions.

No. 7: Another application of HRA could be in solving industrial relations problems where hur values may, if accepted, provide a rational basis for discussing reward structures.

No. 8: And lastly, it enables to integrate human asset values with financial accounts for reportir purposes.

MLB: I think we have covered several questions relating to HRA. I am sure you would like to say a fe conclusion?

KR: Human beings cannot be 'owned' as assets. In attempting to put a value on them, we may be ru danger of reducing them to the status of plant and machinery or furniture and fixtures. In our el conserve and develop employees, we must recognise the real danger of dehumanising and alien which will be counter productive. Such psychological and philosophical issues have to be very i in mind.

Whether we look at our employees as vibrant individuals or as team mates or as part of the com assets, the fact is that we know far less about the human resources of our business than the finar physical resources. The accountants face this challenge and have this opportunity of coming up concepts and fashioning new tools for more effective management of our scarce and valuable hu resources with the consequent economic and social benefits.

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MBA-4.3

Strategic Management

CASE STUDIES

BROOKE BOND INDIA LIMITED (B)

Brooke Bond India Limited (BBIL) has come a long way since it commenced business in India on 9th September, 1922 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.*

The executives of the company described BBIL as the world's largest tea marketing company. During its four decades of growth between 1927-67, the company introduced new products, including coffee in conventional powder form. The next decade saw the seeds of diversification being sown and some projects fructifying. According to the company's top management, the immediately past decade i.e., 1978-88 has been a momentous one which witnessed a phase of remarkable financial growth that has lifted the company out of a state of static prosperity to one of rapidly increasing profitability.

The company went public in 1967 and offered 25 per cent of its equity share capital to the Indian public. During 1977-78 (i.e., after the FERA Act 1973 was enacted) the equity of the parent company, the London based Brooke Bond Group (BBG) plc, was reduced to 40 per cent to fall in line with the law. 8,28,000 equity shares of Rs.10 each were offered to the employees and the existing members (Indian nationals) at Rs.12/- per share. Further 8,76,000 equity shares were allotted to the financial institutions at par for cash. The BBG (with 62,834 employees world-wide) has been a respectable name in several countries in the marketing and distribution of tea, coffee, meat and other food products; plantations; ranches; horticultural and other agricultural activities as well as printing and microbiology.

Takeover by Unilever

On 10th October, 1984 a dramatic development took place. The BBG which held 39.9 per cent of the shareholding of BBIL was taken over by another London based Anglo-Dutch transnational—Unilever plc. Two strange consequences ensued. First, BBIL which had hitherto been engaged in a bitter fight in the Indian packet tea market with the Unilever affiliate, Lipton India Limited (in which Unilever holds 40 per cent shareholding), had become a somewhat uncomfortable stablemate of its formal rival in India. Lipton India Limited is India's second largest packaged or branded tea and marketing company. Second, the Bombay-based consumer products company Hindustan Lever Limited (HLL) — the third largest private sector company in terms of sales turnover—in which Unilever held 51 per cent of the shareholding has acquired *primus inter pares* position within the Unilever affiliated companies in India. For C.S. Samuel who retired from the company on 3rd July, 1989 (earlier the retirement was scheduled on 2nd April, 1987) after 18 years of service (including a full decade as a Chief Executive), the takeover of BBG by Unilever in late 1984 was an ironical twist. In 1971, having risen to the position of a Chief Accountant of the company and after serving for four years in that capacity, Samuel quit HLL (after 17 years of service) because he was not promoted to the position of finance director. By a stroke of destiny, he found himself back in the Unilever fold after 14 years, though perhaps as an uncomfortable bed fellow.

Samuel, described as an articulate, soft-spoken yet a strong Chief Executive who commanded widespread respect in the corporate and managerial circles in the country and abroad, however took the development in its stride. Given its sheer size and the fact that HLL was already in *loco parentis* to Lipton India, it was feared that BBIL would fall within its sphere of influence—if not overt control—of the former.

The Chief Executive of HLL, Dr. A.S. Ganguli, had already drawn up a plan on the retirement of Samuel under which P.J.M. Panikar, Director (Commercial) in HLL was to succeed Samuel as president of BBIL. According to corporate scene watchers a plan, in keeping with the Unilever practice in other foreign countries under which HLL's Chairman would be the national Chairman of the Unilever companies in India with the Chief Executive of HLL, Lipton and BBIL reporting to him, was forwarded to Unilever, London. But the BBIL top brass in general and Samuel in particular was opposed to such a plan. If anything, Samuel would prefer to distance the relationship at more than arms length. Fortunately for him, just prior to Unilever took over BBG, Samuel had

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Case (1991) prepared by Dr. M.L. Bhatia, Member of the Faculty, School of Management, Indira Gandhi National Open University.

arrived at an agreement with the latter company that his tenure as Chief Executive would be extended by another two years after the expiry of the original term on 2nd April 1987, despite his attaining the official retirement age of 58. Thus, the issue of bringing BBIL under the control of HLL was skirted. The rationale for the extension of Samuel's term as Chief Executive was that there was no clearly identified successor to him. Unilever, after it took over BBG in late 1984, saw no reason—given BBIL's excellent operational results during the Samuel era which began way back in 1978—to disturb the arrangement. Having secured two years extension, Samuel made no secret of his intention to ensure that he was succeeded by one of his three senior vice-presidents. And this is what exactly happened. On his retirement on 2nd April 1989, young J.S. Sabbarwal, who is considered to have made contribution in the volume growth and profitability of the traditional business operations during the past few years, took over as Managing Director. Commenting on this event, the Chairman of the company, D.K. Basu, said, "the torch has been passed on to a new generation." ..... Sabbarwal has his own dreams and ideals about the company and has a care for people and pride in what he has taken over.

Purchasing and Blending Operations

BBIL is the single largest buyer of tea for domestic consumption and its team of 16 purchasers buy tea at five buying centres located at Guwahati, Siliguri, Cochin, Coimbatore, and Calcutta. After tea is purchased it is despatched to the company's six factories situated in Calcutta (West Bengal), Tundla (UP), Kanha (Maharashtra), Jamnagar (Gujarat), Ghatkeser (AP), Coimbatore (TN), which employ nearly 4,500 employees including 100 executives for blending and packaging.

For a packet tea company such as BBIL what is important is standardisation. When the quality of 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 BBIL so that consumers, most of whom have been loyal to a brand for years together, 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 teas as per the blending sheets received from the tasters to package in various packet sizes and despatch them to the various departments in accordance with the indents received.

Marketing Organisation

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 actually started gaining ground after 1940.

Since the company commenced its business 80 years ago, it has developed formidable distribution and marketing skills in its traditional and core business of tea and coffee in the domestic market. The impressive volume of branded and packaged tea is marketed by a large sales force of 1350 supervisors, salesmen and van men—possibly the largest sales force in the world—which includes nearly 100 controllers and officers, 53 area managers, 6 regional managers. Typically, one area manager handles nearly 60-65 salesmen, 4 supervisors and one executive. The distribution is operated through 1275 depots spread all over the country. The large field force is part of a unique cash-based target selling system (also known as the depot system) developed by the company. The system completely eliminates middlemen and stockists and links BBIL's sales personnel directly with the 5.05 lakh retail outlets, including 1.65 lakh "hot tea shops" which are serviced on a weekly or fortnightly cycle. An outstanding feature of the direct selling system is that it is all cash-based. Thus it does not give rise to any outstandings. Each depot, which is serviced by motorised transport vehicle (either four wheeler or three wheeler), is like a mobile marketing unit which delivers company's product on a cash basis. The executives of the company claimed that no other company in India had a similar system which has been working so well. Of course, with the growth of company's business, the volume of cash to be remitted to the headquarters on a daily basis has considerably risen over the past few years.

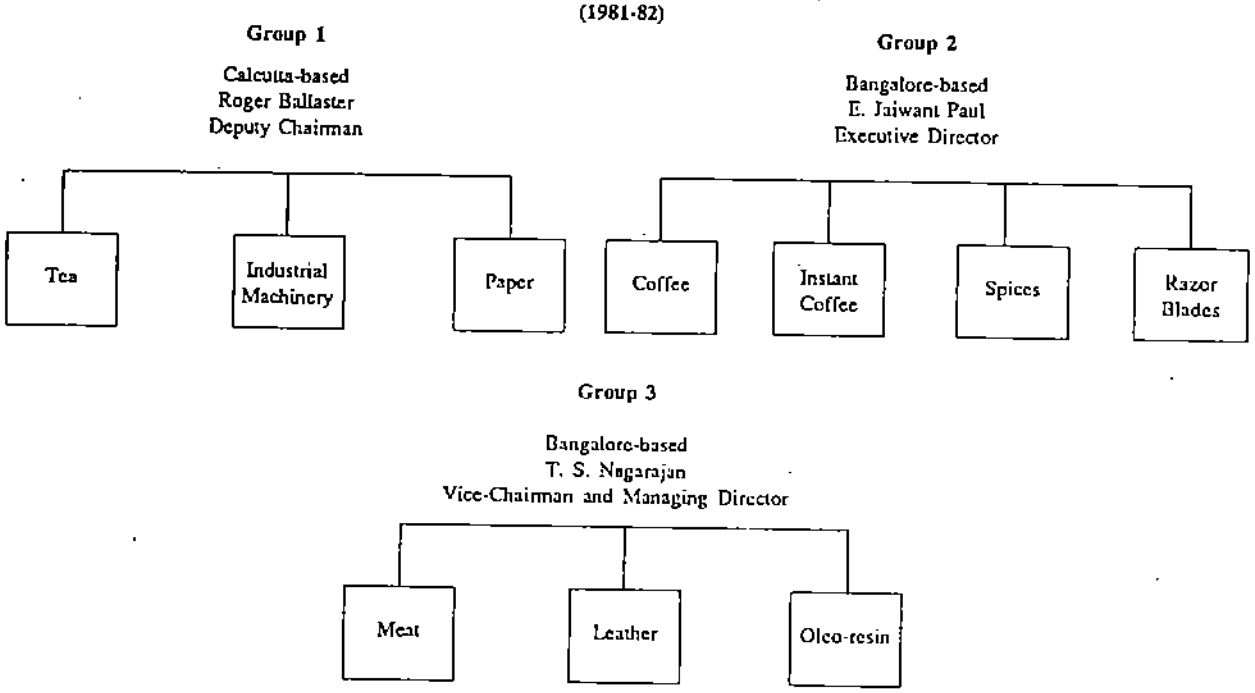
Organisation Structure

Till the middle of 1981, BBIL had a functional structure. There were separate departments for managing factories, sales and markets, finance, commodity purchase etc. When the company commenced its meat project at Aurangabad, it felt 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 was assigned to work exclusively on the meat project so that it could be held responsible for its performance and results. This led to the emergence of profit centre based product divisionalisation in the company. The concept of profit centres got further strengthened when the company decided to go into the distribution of razor blades, and the marketing of spices. The leather unit and a paper project were also round the corner at the same time. The responsibility for all these operations and results had to be clearly

established at senior management levels. In July, 1981 the new divisionalised structure became operational within the organisation.

The profit centre based organisational structure was built around product groups and was supported by service functions such as finance, transport, and advisory functions such as technical and secretarial services. The ten major activities were constituted into ten profit centres which were in turn aggregated into three groups, each headed by an executive director of the company as shown in Figure 1.

Figure 1: Profit Centres at Brooke Bond (India) Ltd. (1981-82)

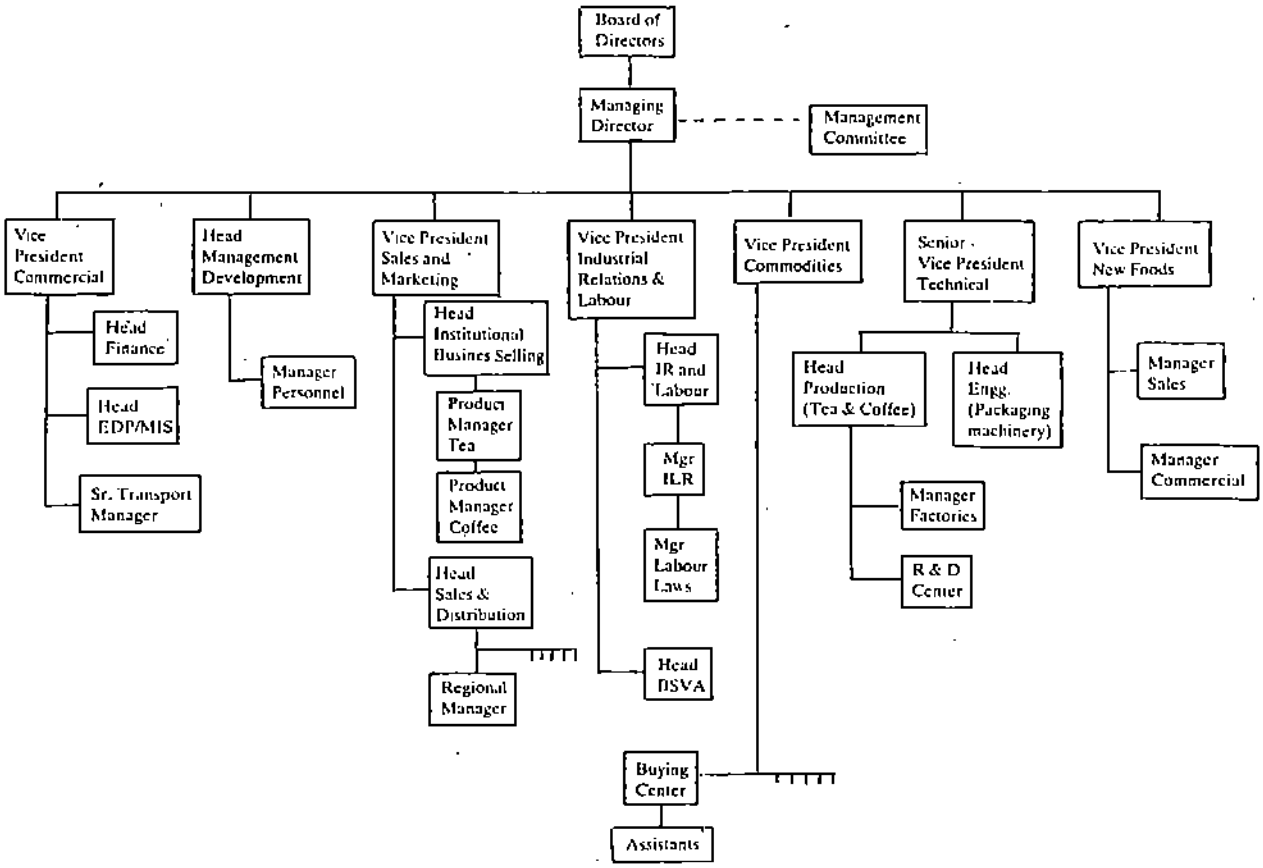


Source: Bhatia, Manohar L., 1986, *Profit Centres: Concepts, Practices and Perspectives*. Somaiya Publications, Bombay. p. 235.

With most of the diversifications having been disinvested, the company now (as of December, 1990) has, by and large, reverted to the functional structure as embodied in Figure 2 though the profit centre idea is still applied on very limited scale. For multifunction co-ordination and also for assisting and advising the managing director, there is a Management Committee which comprises heads of all the functions. Each function is headed by a vice-president except technical department which is headed by a senior vice-president. The Vice-President—sales and marketing, looks after two segments; sales and distribution and big institutional business selling. All these segments are headed by general managers, now called "heads". Product managers of tea, and coffee report to the head — marketing. There are 53 area managers, and 6 regional managers. The Vice-President—Industrial relations and labour also supervises BSVA i.e., Big Scale Value Analysis function. The Department of BSVA in fact works on the lines of a project team and is headed by a team leader. Under the Vice-President—commodities function six buying centres, each of which has certain assistants. With its greater strategic thrust on new foods, Vice-President—New Foods has been given greater freedom. He has his own separate sales and commercial functions.

Diversification and Expansion

BBIL has had a spate of diversifications. Prompted by a strong financial (cash) position coupled with a mix of zeal and ambition, with virtually no debt and with its core businesses of tea and coffee well entrenched, the company took up a number of diversification projects. T.S. Nagarajan who has been Vice-Chairman and Managing Director of the company for nearly a decade (till he resigned from the Board as a director w.e.f. 31.3.89) is given the credit, with, of course, the impetus provided by C.S. Samuel, for spearheading the company's diversification drive. According to him, 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 1966. The second phase in the company's diversification process began in the mid 70s after the equity shareholding by the parent company (BBG) was reduced to 40 per cent in 1977-78. Under the provisions of FERA, 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 in 1976. BBIL's meat plant has been regarded as the first scientific meat processing plant set up in the country. It was designed and integrated in such a manner that there was no wastage in operations. Even the effluent was used as fertiliser. In this phase the company also set up its oleo-resins plant for export purposes, and an industrial machinery (printing and packaging) unit.

In the third phase, BBIL set up a leather processing unit at Aurangabad, got its instant coffee plant at Hosur (TN) going by mid 1983 and set up 15,500 tonnes per year paper manufacturing unit in Bilaspur, Madhya Pradesh.

The main particulars of diversification projects are as follows:

Instant Coffee

In 1966 the company made its first diversification into instant coffee business in pursuance of its perception that demand for a product in a given market was neither constant nor inherent. It was the availability of the product in the market place which stimulated demand. The company put this belief to test in the instant coffee market for which the national demand at that time was 200 tonnes per year. The belief turned out to be true in that even by 1982 the production of the company's instant coffee-chicory blend was 1600 tonnes per year while the demand for this blend, marketed under the name *bru*, exceeded supply.

The company submitted an application for its third plant for producing instant coffee at Hosur in early eighties since it felt that there was urgent need for augmenting capacity to cater to increasing demand. During **1980-81** the company obtained approval for setting up the plant with 1500 tonnes annual capacity subject to the commitments on the part of the company that it would export 50 per cent of its production and introduce pure instant coffee in the domestic market (to provide a measure of competition to the almost monopoly enjoyed by the then Food Specialities Limited). As scheduled the plant was commissioned in June 1983. Pure instant coffee *Brooke House* was introduced in the domestic market. The company undertook negotiations to export instant coffee to Europian countries, Singapore, Malaysia and U.K. Though the company considerably improved its share of instant coffee in domestic market by 1983-84, it felt that its new plant had not yet stabilised. As suggested by foreign technical experts, the company carried out some modifications during 1983-84 to overcome the snags. With teething problems thus overcome, the company constantly increased its production and sales.

The company introduced for the first time in India agglomerated instant coffee (in granular form) in December 1988 which was the culmination of the company's determination to introduce new technology which it acquired from Niro Atomiser, Denmark, as a consequence of an agreement with it. Over the recent past the trend in international market has been towards the consumption of agglomerated instant coffee. "The agglomeration process enables each granule to capture and retain all the flavour, taste and aroma of the coffee bean." The company also took steps to improve the quality and taste of traditional spray dried instant coffee. Not known commonly, manufacturing of instant coffee is quite a complex process.

The company claimed that its premier brand *bru* was the largest selling instant coffee in India (more popular in southern markets of India) with its market share of 42.8 per cent, compared to 37.8 per cent of Nescafe's. With the commissioning of Hosur plant the company augmented its production of instant coffee by 1,000 tonnes to 2,500 tonnes and introduced its pure instant coffee *Rich* (which has replaced the earlier brand *"Brooke House"*). The national market of instant coffee is expanding by 8 to 10 per cent per year but according to the company it has been expanding its sales volume faster than the market share of growth.

Meat project

The entry into meat and leather business was a part of the second phase of diversification exercise. The meat project stemmed from the perceptual conviction of the company to diversify in the consumer product sector of which the company had a good feel.

The wholly export oriented meat project was set up at Aurangabad at a cost of Rs.7.50 crores and it became fully operational during 1978-79. A can plant to pack meat was also commissioned during this period. The company claimed that its plant, which humanly stunned, slaughtered and processed 100 "economically useless" buffaloes per day, exported corned meat valued at Rs. 4 crores for the year ended June 1981. Further, it exported frozen meat, meat extract, soup stock medium, bone meal, tallow and hides and other by-products cumulatively valued at Rs. 2. 11 crores to Britain and EEC countries.

Export of this value added product were meant to be made to 15 countries. Contribution to profit since 1980-81 however remained below the expected levels for several years. The chronology of events relating to meat project is presented in Figure 3.

Figure 3 : Meat Project—Chronology of Events

1980-81

- The shipment to Egypt—the primary market for this product—were suspended. The company attributed this to certain marketing problems and the general slackness in trade to the gulf countries due to Iran-Iraq war.
- An agreement with Romania for export of corned beaf of the value of Rs. 180 lakhs was signed.
- The company continued its efforts to get approval for export of meat products to EEC countries which required the completion of inspection procedures.
- An animal welfare clinic was started which became quite popular. A large number of animals from the surrounding areas were brought for treatment.
- The company donated breeding bulls to animal husbandry department of Maharashtra Government. The company raised more bulls at the factory site.

1981-82

- A general decline in price in the international meat market was witnessed.
- Exports to Egypt which remained suspended were resumed.
- Orders from Romania for Rs. 190 lakhs export were received.
- Steps for inspection procedure for export to EEC were completed. Representatives from the UK were expected to visit meat plant.

1982-83

- International prices further declined as a result of increasing supply from South American countries.
- Problems of trade balances for bilateral trade countries affected the company's meat business.
- Inspection team from UK was expected to visit Aurangabad plant in 1984.
- The company expected favourable prospects in future based on the belief that meat trade in the international market was usually cyclical in nature.

1983-84

- On the whole it was a disappointing year again due to continued recession in international markets.
- Serious setback in exports due to certain problems with regard to nomenclature on the labels of products.
- Inspection team from UK visited the plant and a favourable report was awaited.
- Substantial orders from Egypt and the countries from Gulf were received and shipments made.

1984-85

- On the whole the company felt that there was a considerable improvement over the previous years but operations remained below the expected levels.
- Sales to Egypt were suspended because of foreign exchange problems in that country.
- Approval of health inspection authorities of UK received. Thus the company hoped its entry into EEC, thereby reducing its dependence on Egypt and West Asian countries.

1985-86

- In view of the increasing uncertainties in the Egyptian and west Asian markets and the non-acceptability of buffalo-based corned meat in the European markets, the company decided to disinvest this operation.
- A memorandum of understanding was entered into by the company with Allanasons Private Limited on 16th July 1986 for the sale of meat and leather units (at Gavrai, Aurangabad) at the price of Rs. 5 crores, well above its depreciated value.

1986-87

- Sale of the meat and leather units to Allanasons was completed at a purchase consideration which reportedly has resulted in Rs. 6 crores of net profit for the company.

In India, because of religious sentiments and Government policy, cow slaughter is banned.
Although test marketing of the company's products met with great success, the project had to be abandoned as the health authorities of UK refused to accept buffalo meat as beaf and the parent company (BBG) which was to market BBIL's products itself disinvested its interest from meat business. As a result of all this the company decided to close down the plant.

Leather Finishing Project

The wholly export oriented leather finishing project was a by-product of the meat project. The main points since 1980-81, on the pattern of the meat project, are presented in Figure 4.

Figure 4 : Leather finishing Project—Chronology of Events

1980-81

- Building for the plant was progressing as scheduled
- Most of the imported machinery received
- Commercial production expected in June 1982

1981-82

- Plant commissioned in June 1982 and geared up for production
- Finished products covering safety prints, upholstry and safety leather were developed and displayed at Paris Leather Fair which evoked considerable interest and response.

1982-83

- In spite of recession and the world-wide competitive situation resulting in low prices, considerable progress was made in sampling and establishing customer relationships.
- Some consignments were successfully shipped to UK, Australia, Sweden and Germany.
- The Normal company felt that new venture was progressing satisfactorily.

1983-84

- Market conditions were marginally better than previous years. Products sold at better prices than competitors.
- Order position was healthy and all efforts were made to match production with increasing inflow of orders for exports
- Significant progress was made in securing customer acceptance from Western countries.

1984-85

- Market conditions improved during the year and unit realisations were higher.
- Not much improvement in volume due to reduced availability of hides from the meat factory during the second half of the year.
- Steps were taken to reduce complete dependence on domestic operations. Better results were expected.

1985-86

- Since the company decided to disinvest meat operations, this also meant disinvestment of leather finishing plant. The MOU, entered into with Allanasons on 16th July 1986, also included the sale of leather finishing plant.

1986-87

- Sale was completed and purchase consideration received.

Industrial Machinery

In a competitive market, scientific packaging assumes considerable importance. With a view to gain competitive edge, the company had for a long time set up its own printing plant. The entry into this industry was made in mid 70s during the second phase of diversification. During 1980-81, the plant produced and sold four printing and packaging machines. More inquiries from within and outside the country were received. This division, more or less, has been non-functional for many years.

Oleo-resins Project

The extraction of oil from resins (for export only) was taken up in the second phase of diversification process in the mid 70s. During 1978-79 some modifications in the plant were made to improve yields and quality. The products from the pilot plant were successfully test marketed and commercial production commenced in 1979-80. The company believed that this project would further increase its value added exports.

Paper Mill Project

The company thought that the diversification into paper would be ideal as it would provide an inhouse steady source of supply of kraft and poster paper for its own requirements of packaging for tea and coffee.

The company received a letter of indent for setting up a paper mill in Bilaspur district in Madhya Pradesh with capacity to produce 30 tonnes of Industrial paper per day with agricultural waste as the basic raw material. The survey for suitable site for locating the plant was undertaken with the help of consultants. The possibility of importing second-hand machinery was explored to reduce the gestation period. The chronology of events in relation to the paper mill project are present in Figure 5.

Figure 5 : Paper Mill Project—Chronology of Events

1980-81

- License received for setting up a paper mill with annual capacity of 15,500 tonnes. The second-hand machinery abroad was got dismantled under the supervision of the company's engineers and packed for shipment to India.
- Paper mill expected to go into production by December 1983.

1981-82

- Civil construction work at Bilaspur was progressing satisfactorily.
- Imported paper machinery received at site, work for overhauling and minor modifications was taken up.
- Orders for indigenous plant and equipment were placed.
- The plant was expected to be commissioned by December 1983.

1982-83

- The construction of building and erection of machinery was progressing as scheduled.

1983-84

- Paper mill inaugurated on 23rd November 1983. After trial, commercial production was started in June1984.
- In spite of using non-conventional, raw material (agricultural waste) quality was well accepted.

1984-85

- In the first full year of production, packing and printing paper was stabilised despite teething problems.
- Supplies were made both for captive use in the company's tea and coffee factories and for sale in the open market.

1985-86

- While there was improvement in the rate of production, operations were suspended for a period of eight weeks because of problems relating to discharge of effluent from the factory.

1986-87

- Overall volume, though below plant capacity, was higher than the previous year.
- The generally sluggish demand continued during the year which affected operating results.

1987-88 (78 weeks)

- Improvement in both volume and profit.
- The overall result of this operation however continued to be below acceptable levels, considering the investment made in the project.

This downstream diversification project failed to take off because of various problems which, as the Chief Executive Officer of the company stated, were beyond the control of management, such as the Government policy and the scarcity of raw material like wood-pulp. The company management felt confident that the unit would soon be out of the red since it had got rid of its teething problems.

Razor Blades Projects

The company took up the sale of blades manufactured by Centron Industrial Alliance Limited in January 1979 after receiving the sanction from Reserve Bank of India, as required under FERA. The company also moved an application to the Government for approval for amalgamation of the unit with the company. The chronology of events since 1980-81 is presented in Figure 6.

Figure 6 : Razor Blades Project—Chronology of Events

1980-81

- In January 1981 a scheme of amalgamation was approved by the Centron's shareholders and creditors.
- Necessary petitions under Sections 391 and 394 of Companies Act 1956 for approval of scheme of merger were filed with High Courts and an application for approval also filed under MRTP Act (Section 23, Sub-section 4).
- Satisfactory levels of sales were maintained.

1981-82

- Approval of Central Government under MRTP Act was received but Harbans Lal Malhotra & Sons filed an appeal in the Supreme Court. The stay order obtained by the latter was subsequently vacated.
- The State Industrial and Investment Corporation of Maharashtra (SICOM) and the United Commercial Bank which had initiated the proposal of merger of Centron with the company and had also voted for the scheme of merger at the meeting held on 27.1.81 under the direction of Bombay High Court, unexpectedly, chose to consider an alternative scheme offered by Malhotras.
- The company however maintained satisfactory levels of sales.

1982-83

- Merger was delayed due to protracted litigation in Bombay and Calcutta High Courts. The efforts by the company to expedite were frustrated.
- The SICOM and UCO Bank which had earlier supported the merger now withdrew their support.
- The company registered substantial increase in sales which resulted in improvement of Centron's financial position.

1983-84

- The hearings in Courts were completed but orders were still awaited. Efforts to expedite the hearings frustrated by numerous litigations.
- A meeting of shareholders and creditors of Centron was convened by the Bombay High Court to consider the alternative third party scheme.
- The company continued to be the selling agents but no supply was received since February 1984.
- The management of Centron entered into a technical collaboration for its products in contravention of the scheme of amalgamation with the company.
- The company proposed to place the new facts before the Calcutta High Court to consider whether in the altered circumstances the scheme as proposed by the company was still fair and reasonable.

Two-wheeler Project

During the year 1982-83 the directors of BBIL decided to takeover Karnataka Scooters Limited (KSL), a very sick Government owned unit with licensed capacity to produce 24,000 two-wheelers at its factory at Maddur, and whose application to enhance the licensed capacity to 60,000 units was pending with the Central Government. The directors, after evaluating the future prospects of this operation, felt confident to make KSL a commercially viable unit and thought this would contribute to the growth of the company. Another reason for taking over KSL was that BBIL had decided to shift its headquarters from Calcutta to Bangalore.

The directors approved a scheme of amalgamation under section 72A of the Companies Act. Consequent upon this decision and also with a view to set up export and trading house the company made suitable modifications in its "objects" clause in the Memorandum of Association. Pursuant to the directives of the Karnataka High Court, the shareholders and creditors of KSL and BBIL approved the scheme of amalgamation. The order under MRTP Act was also being awaited. The merger of KSL became effective from 28th May 1985. The assets were vested in the company retrospectively, with effect from 3rd July 1983. 2,09,333 equity shares of Rs. 10 each and 20,000 11 per cent redeemable cumulative preference shares of Rs. 100 each as fully paid were allotted to shareholders of KSL.

During 1985-86 the sales of motor-cycles were at a disappointing level due to intense competition. The production during this year was also disrupted due to a prolonged strike which lasted for four and half months. The year 1986-87 also proved to be disappointing year in spite of the fact that the company introduced two new models. A study of the market indicated that production of two-wheelers was in excess of the potential demand resulting in severe competition. A distinct shift in consumer preferences away from 50cc motor-cycles of the type the company manufactured was also noted. There was virtually no demand for 50cc motor-cycles.

In order to avoid continuing losses, the company had to suspend the operations of the Automotive Division. A voluntary retirement scheme was offered to employees of the division which was accepted by almost all of them. As the unfortunate situation in the two-wheeler market did not appear to be a temporary phase, the prospects of the automotive division becoming a viable entity seemed remote. It was decided to dispose off the unit (division). The plant and machinery of the division were sold as scrap during 1987-88 to Bangalore-based BPL Group. The real estate (land and building) has fetched over Rs. 2.5 crores for the company.

Spices Project

BBIL entered into this line of business in 1982. Based on the successful test marketing of packaged spices in four main cities, the company decided to launch a range of spices in selected markets during 1984-85. The future prospects of this new operation appeared to be quite promising.

During 1986-87, the marketing of packaged spices was extended from the hitherto ten cities to thirty cities and further extension was planned during the year. During 1987-88, despite modest volume growth, the overall performance was found to be below expectations. The company was attempting to analyse and understand the problems and take suitable steps to achieve higher growth in the coming years.

The company believes that as the country's brand and quality conscious middle class expands, it has bright future in the packaged spices marketing business. The company sold 2.1 million kgs. of spices at Rs. 6.5 crores in 1988-89. Though there are strong regional brands, it is believed that there is no single national brand in the estimated huge 2,000 crores per annum national market for spices. By the end of 1990 the company expected to achieve a turnover of Rs. 25 crore per annum. The company has thus touched only the tip of the iceberg of the spices market so far.

Export Operations

The company commenced its export business in 1968-69 during which it had an export revenue of Rs. 50 lakhs, including value added goods. The year-wise exports are presented in Annexure-I. The company set up an Export and Trading house during 1982-83 to reap the advantages in this respect.

The perusal of Annexure-I would reveal that there was substantial increase in exports, including value added exports, in the year 1984-85. This came primarily due to export of tea bags and consolidation of position in Egypt and other West Asian countries. The decline in exports during 1986-87 has been attributed to lower sales of packet tea in West Asian markets on account of difficult trading conditions. There was again considerable increase in exports during 1987-88 (78 weeks period) and this came mainly from increasing exports of packet tea and tea bags. Excluding the export from meat operation of the previous year (1986-87), which was disinvested, the increase in exports represented a 10 per cent increase on annualised basis. The company had a very successful year in spices exports which increased by almost 100 per cent in volume and by 150 per cent in value. The company launched a new brand of orthodox tea called *Al Majlis* in Saudi Arabia. The company expects the new brand to give it a substantial volume in the large market.

The policy of the company is to consciously promote export of value added items like packet tea and tea bags, blended spices and processed foods. BBIL is thus shifting its emphasis from bulk teas to value added packaged brands which constitute 80 per cent of its exports. In addition to bulk spices, the company has since 1971 been exporting a range of ground spices aptly branded *Indian Splendour*. BBIL plans to open more offices abroad to give greater direction and strength to its exports.

In the intensely competitive market abroad, the company has chalked up some notable successes. BBIL ranks among the top five exporters of branded tea and tea bags. In the year ended 3rd July 1989, the marketing efforts yielded a sizable foreign exchange income of Rs. 49.34 crores of which 36.27 crores was contributed by value added products. According to company sources, its *Red label* was the largest selling tea brand in Dubai, Kuwait, Quatar, and its *Blue Tea Pot* was the second largest selling brand in Egypt. BBIL had the second largest share of

market for tea bags in West Asia (excluding Saudi Arabia) after Lipton (UK). In the mid 70s, following discouraging response abroad, the company relaunched its tea bags range after improving the packaging. Currently, it exports 48 per cent of all the tea bags exported from India. The company now is the largest exporter of packaged tea in the world. In the 1989 budget the Government reduced the cash compensatory support on tea bags from 20 per cent to 8 per cent. This, the company felt, was a major setback to the progress of its value added exports.

Subsidiary Company

BBIL has one wholly owned subsidiary company which was incorporated in Karnataka on 28th June 1984 by the name of Bon Private Ltd. to facilitate certain aspects of domestic and export operation. The company soon after became Bon Ltd. on account of its being interconnected company and was registered under MRTP Act.

The subsidiary company earned a profit before taxation of Rs. 45,695. BBIL received a dividend of Rs. 10,003 (10 per cent of its equity investment of Rs. 1,00,030). The Balance Sheet and Profit and Loss Account of Bon Ltd., are presented in Annexures 2 and 3 respectively.

Headquarters

In 1981 the company shifted its headquarters from Calcutta to Bangalore in rented premises. On 19th August 1986 E.J. Verloop, Director of the Unilever inaugurated Brookefields, the BBIL's magnificent new Rs. 3.58 crore corporate campus at Kundallahalli village, 13 kms away from Bangalore. Spread over a greenfield site of 20 acres, the American style sylvan corporate campus includes 12,000 sq. ft. auditorium-cum-training centre and a recreational club for its top management and 200 employees.

While export operations and tea buying are based in Calcutta, the rest of the profit centres are based in Bangalore.

Diversifications: A Brief Review

It will be seen that almost all the BBIL's diversification projects have come unstuck. Of the diversification projects the most ambitious was the meat project. After struggling over a decade to get the business going, the company sold off the plant for various reasons, including the gradual withdrawal of the then parent company BBG from the corned beaf making business and the belated discovery in London that buffalo meat sold under Brooke Bond brand name abroad might hurt the parent company's brand image. After the factory was on stream the European markets and health authorities did not accept buffalo meat as beaf. In Europe beaf means cow meat. The company's minor diversification into oleo-resins (oil of resins) proved a non-starter as production cost proved incompetitive.

The entry into the high potential safety razor blades came to grief in 1983 when the merger of Aurangabad-based Centron Industrial Alliance—an ailing unit—was sabotaged at the eleventh hour by powerful Malhotras whose numerous brands of blade had carved out an estimated 80 per cent share of the national market till 1985-86.

The company also made a rebound on its off-beat two-wheeler project. The company found itself in deep mess. The merger took place at a time (May 1985) when there was a massive spurt in capacity creation in the two-wheeler industry. There was sudden influx of two-wheelers with Japanese technology and this changed the Indian scooter-motorcycle scenario. When the company decided to acquire KSL, the market for two-wheelers was starved of good vehicles. Besides Bajaj Auto, there were only a very few other major competitors. Unfortunately for the company the Government approval for the takeover took far too much time and in the meantime too many competitors had entered the fray. To add to the problems of BBIL management, the product BSA Bond, which was launched with much fanfare, almost flopped in the market as the product lacked appeal and its performance was found to be below expectations. The market for two-wheelers changed too fast, almost dramatically, that the company management did not get enough time to design a new product and launch it as a winner. Against the installed capacity of 20,000 units, a meagre number of 177 scooters and mini-motorcycles were produced during 1986-87. Much of the euphoria which was generated within BBIL prior to merger evaporated though the tax advantage point remained still valid. In view of the cut-throat competition, the company decided to disinvest its interest in KSL.

The company's diversification into paper industry had been adversely affected by external market conditions. In 1984-85, BBIL produced only 6,271 tonnes of paper against its installed capacity of 15,500 tonnes per annum. Of the quantity produced only 3,904 tonnes were sold in the market which generated a modest revenue of Rs. 3.70 crores. In 1988-89, the company sold 5,095 tonnes (actual production 5,144 tonnes) and earned a

revenue of Rs. 6.65 crores. The paper unit has since been sold to Kanoi Paper and Industries Ltd. The sale was completed on 15th January 1990 in accordance with the approval of the shareholders accorded under Section 293 (i) (a) of the Companies Act 1956 at the General Meeting held on 19th June 1989. The company has received the entire consideration (not known) on the completion of the formalities.

The company is optimistic about its spices project and believes that this may turn out to be a gold mine for it. According to company's management its diversification into spices has caught the imagination of the market. It seems that the optimism of the company is not without reasons. The spices market in the country thus far has been controlled by traders who buy in bulk and market it as loose spices. The conscious consumer always has some kind of a reservation in buying loose spices as he thinks he might be cheated by adulterated stuff. With branded products coming from a reputed company, he can be sure of the quality and purity of the product. It is this quality consciousness of the burgeoning middle class that has helped the company gain a reasonably strong foothold in the spices market.

There is no doubt that company took a calculated risk in venturing into unrelated areas. But the company made it sure that none of these projects were too big to make a significant dent into the company's overall performance in the event of their running into trouble, "It takes more courage and pragmatism to divest than to invest" stated C.S. Samuel, the president of the Company till April 2, 1989. It is worth noting that the failures of diversification projects and the losses incurred in these projects had no impact on the investor. It is no wonder then that BBIL's diversification forays have been described as "small potatoes" by its executives.

The company's top management has carefully nursed and nurtured its core tea and coffee processing and packeting businesses. This profit centres have continued to register handsome gains in the sales turnover and profits. The company sold 92 million kgs. of packaged and branded tea and 11 million kgs. of coffee valued at Rs. 455 crores and 71 crores respectively in India and abroad. These two commodities sold under BBIL's numerous brand names (See Annexure-4) contributed 98 per cent of the company's total turnover in 1988-89. For the first time, the company, over the recent past, has been able to keep pace with the overall rate of increase in domestic tea consumption.

The company has introduced institutional business service to meet bulk consumer needs and has, for the first time, introduced coffee and tea vending machines at several airports carrying company's brands.

The company's ability to retain a market share of its 12 brands within the constantly expanding domestic packet tea market as a whole is the consequence of determined marketing efforts involving changes in packaging, designing and brand advertising strategies. BBIL recently introduced its first CTC (cut, tear and curl) fannings (i.e., small leaf) brand in the medium price segment with considerable success. Though perceived in the market as an upper class product, the company envisages good long-term growth prospects for branded tea bags in the domestic market. The company enjoys 90% market share of this consumer segment.

Recently the company revamped the packaging of its conventional coffee brands, switching to stylish aluminium foil packets which are designed to preserve freshness and enhance shelf appeal. BBIL's *Green Label*, the country's largest selling branded conventional coffee (with estimated share of 25 per cent of the total branded and packaged conventional coffee market) was faring well and the company was planning to introduce regionally oriented packs in a big way. Though marketing of branded conventional coffee is not a big business for the company, it is modestly profitable and the company intends to stay with it. The brands of company's food and beverage products are listed in Annexure-4.

Performance of the Company

The company's gross income increased by 195 per cent from Rs. 195.86 crores in 1979-80 to Rs. 551.75 crores in the year ended 30th December 1989. Pretax profit over the same period rose by 362 per cent. The company has declared a dividend of 30 per cent for the latest financial year (1988-89). The financial highlights for the 10 year period, from 1978-79 to 1988-89, are given in Annexure 5. The Balance Sheet as on and Profit & Loss Account for the year ended 30th December 1989 are presented in Annexures 6 and 7 respectively.

The company's Finance Director took particular pride in the company's sound financial health. He is reported to have cited two important yardsticks: Return on Net Worth (i.e., profit after tax on shareholder's funds), and the Debt Ratio. The return on net worth rose from 17.8 per cent in 1979-80 to 33.4 per cent in 1988-89. The proportion of debt equity ratio is also remarkably low. With a ratio of 0.8 : 1 for 1988-89 the company has

virtually no debt. Because of internal accruals and surpluses, the company, it has been stated, was fastly approaching a situation when borrowals even for working capital might become negligible.

While all other financial ratios have improved, the one that has fallen from Rs. 30.26 in 1985-86 to Rs. 19.01 in 1987-88 is the net worth per equity share. It has been stated that this is attributable to the disinvestments by the company in various diversification projects that have failed and also 3:5 bonus issue in August 1986 and again 4:5 bonus issue in July 1989.

Problems and Prospects

The main competition to packet tea companies comes from the vendors of loose unbranded tea. The market share of packet or branded teas as a whole of the entire national market for tea had shrunk from 45 per cent in 1971-72 to 30 per cent in 1986. BBIL held 16 to 17 per cent share of the expanded national market (i.e., packet and loose teas) for tea and 59 per cent share of the packet tea market.

Learning a painful lesson from losing market to loose teas, the company in September 1988 started marketing tea in polybags. But then other companies have also followed the suit. Hence, the market has become quite competitive. The changing environment in which television permits instant awareness of new products and brands, the competition might further aggravate. The future will belong to those who can effectively use market skills.

Though the company is the largest vendor of blended conventional coffee in the country with seven brands in the market, the sales indicate a declining trend mainly because of rising popularity of instant coffee.

The company's cash-based direct selling system has served the company well so far. But with increasing manpower costs it can be considered cost effective only if the volume of unit sales per salesman keep rising. However, with unit sales of packet tea having lost considerable ground to loose teas and the company's diversifications into other consumer product lines such as safety razor blades not having quite ticked, the company has been contemplating modifications in the hitherto sacrosanct direct selling system. During the past decade the company closed down, in a phased manner, over 80 depots and "rationalised" journey patterns and frequency of retail calls. "We are not wedded to direct selling system and market dynamics may force a change," said one executive. This shows flexible and open minded approach. The fact that the company pulled out of projects running awry without regard for loss of face is also demonstrative of the boldness. Dilating on BBIL's corporate philosophy, Samuel the then president stated in September 1986, "I honestly don't believe that there is anything permanent about corporate philosophies and plans. The task of corporate managements is to attain a company's business objectives within the context of the overall corporate goals set from time to time. The business environment, political situations and economic conditions keep changing and any progressive management should be capable of adapting to such changing conditions. Our philosophy of corporate growth fits in well with this belief."

With manpower and travelling costs having risen sharply in recent times and with the availability of fairly sophisticated and relatively cheaper trade distribution channels, BBIL is likely to further dilute its direct selling system in course of time. There is also a realisation that direct selling places greater emphasis on ensuring supply rather than creating demand. With the emergence of television as a cost effective advertising medium, the company, it seems, has been emphasising its appeal directly to consumers through the creation of highly perceived brand images. "Thus there is now a greater emphasis on creating a demand pull for our products in the market place than on trade push as in the past" said the marketing executive.

Though several of BBIL's diversification projects have run aground, the company believes the efforts have not been wasted. "The company's efforts to diversify have sharpened the technology orientation of the company and this is likely to have beneficial spin off for its trading businesses. The company now looks for technological solutions to business problems."

It was also mentioned that the company had learnt a valuable lesson from its diversification attempts. The lesson is that *it should stick to its knitting i.e., diversify into related businesses.* That is why, perhaps, the company in the recent past has been consolidating and expanding its activities in tea, coffee, especially instant coffee, and spices business i.e., commodities and consumer goods industries. The failure of diversifications, one after the other, in unrelated areas set the company management to sit back and think up of a diversification project which would help the company to reduce its dependence on tea. It was this process which helped the company spot till recently unexplored field of marketing branded spices.

In relation to its razor blades business, Samuel is stated to have once said grudgingly, "In this exercise we have learnt first hand how some of the monopolies operate in this country."

The company was quite optimistic that the BBG's takeover by Unilever, with its world-wide manufacturing and marketing facilities, would give it an added strength. In future the company is more likely to concentrate its growth and diversification in those areas in which it has experience and expertise and where company could count on Unilever's support. Samuel predicted a bright future for BBIL as India was one of the largest consumer goods market in the world despite relatively low per capita purchasing power. "Any company offering value for money in terms of quality and price has enormous scope for profitabe growth," he said.

In October 1988, a Development and Application laboratory was set up in Whitefield, Bangalore to develop processed and convenience foods for the domestic market. The laboratory supplemented by a pilot plant has the backing of resources of research and development of the central laboratories of Unilever foods.

It has been recently reported in the press that a Memorandum of Understanding has been signed between Unilever and UB Group of Vijay Mallya under which four units of the Food Division (including the market leader Kissan Products Limited) have to be sold to the former. The deal, shrouded in secrecy, seems to make strategic sense "since it eminently fits into the 'tea major' of BBIL." It has also been reported that the executives of BBIL were intentionally not kept informed because Unilever did not want its other affiliate—Lipton India which has a presence in food processing—to nurse any hurt feeling. The Unilever felt it would be better to strike a balance in the activities of both of its affiliates. If one of them grew too big it could have problems with the Government bureaucracy. Already Unilever has been facing some problems with the Tea Board of India which accused the company of manipulating the prices. It is also being rumoured that the company is negotiating to acquire the facilities of Kothari General Foods. The latter had, a few years ago, entered into a collaboration agreement for acquisition of know-how from the world-known General Foods of USA. Though in existence for nearly 4-5 years, the Kothari General Foods has not been able to make a mark in the market.

Company's Image

BBIL enjoys a good image through its social responsibility programmes. The company claims that through its manifold activities, it has consistently invested in labour intensive agro-based industries. It has thus created employment, encouraged self-reliance and helped generate a better life for a number of people in society. By encouraging small farmers in Jamnagar, Gujarat to switch from cultivation of subsistence crops to chicory, a rich cash crop, BBIL has brought a measure of prosperity to about 1,000 families. The company surveyed the area, advised farmers on correct agricultural practices, provided free seeds and gave a guarantee to buy the produce at the mutually agreed (predetermined) price. Nearly 3,000 acres are now under cultivation. From a beginning of 1.5 tonnes the yield has now grown up to 2.3 tonnes per acre.

As a committed corporate citizen, which the company claims itself to be, it has also taken up some other developmental projects. For instance, in Maharashtra and Gujarat, BBIL has used its direct distribution network to distribute Nirodh contraceptives for the Government of India. Around its factory in Ghatkesar and Dhenka (Bilaspur), the company has been substantially involved in village development programmes. It has also sponsored the provision of Jaipur foot, indigenously developed artificial limb (specially suited to Indian needs), to 500 amputees free of cost.

The company's image suffered a jolt in February 1986 when its offices in Calcutta and Bangalore, as also the residences of some of its top brass, were raided by officers of the Enforcement Directorate to investigate what was reported in the press as a "large scale violation by the company of the country's foreign exchange control laws." But the company's Chief Executive described this as a minor technical violation of FERA for which the company sought and was granted pardon upon paying a nominal fine. The fine was also imposed on some of the executives of the company.

What actually happened was that a manager of BBIL in Dubai who had been co-ordinating the company's marketing efforts of non-resident agents in West Asian countries had received certain amounts (Rs. 29 lakhs) in two years directly from the agents out of their funds for the purpose of advertising and promoting the products. Following a complaint from Dubai it transpired in the course of investigations that the above agreement involved a technical violation of FERA in that the manager had operated a personal bank account to channelise the agents' funds for advertising and sales promotion without RBI's sanction.

According to one company executive, the cost of advertising and promoting a brand in the markets of West Asia, in face of stiff competition from Sri Lanka and UK, is gigantic. There was insufficient awareness in Government that establishing a brand in internationally competitive overseas markets was slow and expensive process. The rules relating to expenditure of even earned exchange for advertising and sales promotion abroad were too cumbersome and the procedures too slow to permit marketers to react speedily to market conditions which tended to change quickly. Therefore some degree of trust, he opined, should be reposed in those doing actual job of brand promotion in distant markets. The raids had a temporary demoralising impact on the managers. And, according to him, the export drive suffered a setback. The company's export revenue in the year ended June 1986 in which the raids were conducted declined by 18 per cent.

Personnel Motivation and Morale

Despite the setback suffered in diversification projects, the morale of the BBIL's executives seems high and despite what some manages in the company described as the "Samuel's accountants' outlook" of watching the short-term bottom line too strictly, a climate of fellow feelingness between the top management within the company which extends down the line prevails, asserted one executive. The corporate culture was not rigidly hierarchical and young managers and employees in general have easy access to senior managers. No leg pulling is indulged in, said one area manager.

The company had on rolls 3,500 employees, serving in 50 establishments, represented by 30 local unions with a strong national federation. The company claimed that it had not experienced a single all India strike even for a day during the last thirty years. It was stated that the enviable industrial relations climate within the company was the consequence of shared values and considerable respect for the individual. According to one executive, "the company offers its young managers generous pay and perquisites and a stimulating environment in which they can give off their best."

About 20 management trainees are taken every year. They start with a handsome stipend of Rs. 3,900 per month. "We do not offer jobs, we offer careers to the bright young managers we employ." The senior product manager (spices and direct institutional sales) stated that the BBIL had a democratic culture in which the taking of decisions at general manager level was encouraged. A new emphasis was being laid on training at all levels. In 1987-88 alone, 274 executives and non-executives participated in the inhouse training courses conducted at Brookefield Training Centre. This was in addition to the ongoing training programmes at the units.

The management laid emphasis on adequate employee remuneration and welfare. The average wage in the company was Rs. 3,500 per month and welfare expenditure per employee was over Rs. 500 p.m. The BBIL management has voluntarily introduced a pension scheme which guarantees all employees a monthly pension of between Rs. 168 and Rs. 591 after retirement. Another novel scheme is monthly deposit plan to which only the company contributes on behalf of all employees. Under this plan an employee serving the company for 40 years could get a handsome amount of Rs. 3.36 lakhs as a maturity amount and an income-cum-pension of Rs. 3,057 p.m. on that amount.

Annexure-1

Brooke Bond India Ltd. : Export Performance

Financial Year	Exports (Rs. in lakhs)	Value added Exports (Rs. in lakhs)
1977-78	4356	—
1978-79	3532	1236
1979-80	3771	1716
1980-81	3402	1838
1981-82	3167	1820
1982-83	3836	2076
1983-84	4172	2325
1984-85	5140	3813
1985-86	4196	3256
1986-87	3657	2589
1987-88	5526	3967
1988-89	4934	3622

Annexure-2

Balance Sheet of Bon Ltd. as at 30th December, 1989

LIABILITIES		1989 Rs.	1988 Rs.	ASSETS		1989 Rs.	1988 Rs.
Share Capital	(1)	1,00,030	1,00,030	Investments	(4)	2,000	2,000
Reserves and Surplus	(2)	4,56,092	4,55,930	Current Assets, Loans and Advances	(5)	5,82,391	7,25,386
Current Liabilities and Provisions	(3)	33,747	1,78,730	Miscellaneous Expenditure	(6)	5,478	7,304
		5,89,869	7,34,690			5,89,869	7,34,690

The numbers in brackets refer to Schedules which form part of the Balance Sheet.

Figures for the previous period of the Balance Sheet and the schedules mentioned above are as at 24th December, 1988.

This is the Balance Sheet referred to in our Report of even date addressed to the members of BON LIMITED.

Annexure-3

Profit and Loss Account of Bon Ltd. for the 53 weeks ended 30th December, 1989

			1989		1988
Income		**kgs**	**Rs.**	**kgs.**	**Rs.**
Sale of Tea		—	—	8167.40	1,76,050
Service and Handling Charges			—		490
Interest	(8)		10,875	—	17,050
			10,875		1,93,590
Expenditure					
Opening Stock of Tea		—	—	1423.90	—
Purchase/Receipt of Tea		—	—	6743.50	—
Expenses	(7)		8,713		1,37,895
			8,713		1,37,895
Profit before Taxation			2,162		55,695
Provision for Taxation			2,000		32,000
			162		23,695
Profit after Taxation					
Profit brought forward from previous year			2,60,194		2,49,772
			2,60,356		2,73,467
Appropriations to					
Proposed Dividend (subject to deduction of Tax)			—		10,003
General Reserve			—		3,270
Balance carried to Balance Sheet			2,60,356		2,60,194
			2,60,356		2,73,467

The numbers in brackets refer to Schedules which along with Schedule (9) form part of the Profit and Loss Account.

Figures for the previous period of the Profit and Loss Account and the schedules mentioned above are for 78 weeks ended 24th December, 1988.

Annexure-4

Brooke Bond India Ltd.
Product Brands

Tea (leaf tea and dust tea)

Taj Mahal Tea Bags

Taj Mahal Tea (cartons, 25 and 50 paise paper pouches)

Red Label (cartons, polypacks, paper pouches)

Red Label — Special

3 Roses : cartons, paper pouches

Super Dust :

Deepam A-1 Paper pouches
SHB

Gulab (Paper pouches)

Tea (for Export)

Blue Tea Pot

Instant Coffee

Rich Cafe (90 : 10 Coffee-chicory)

Bru (70 : 30 Coffee-chicory)

Conventional Coffee

Green Label (52 : 48 Coffee-chicory)

Cafe (52 : 48 Coffee-chicory)

Nandi (60 : 40 Coffee-chicory)

Spices

Sona Brand (Chilli, Haldi, Dhania, Mix Masala, Sambher Masala, Rasam, Jeera, Black Pepper, etc.)

Annexure-5

Brooke Bond India Ltd.

Ten Years' Financial Statistics

Rs. in Lakhs

	1989 53 Weeks	1987-88 78 Weeks	1986-87	1985-86	1984-85	1983-84	1982-83	1981-82	1980-81	1979-80
OPERATING RESULTS										
Gross Income	55175	63894	39947	36324	37211	32858	25590	21724	18579	19586
Profit before Interest & Tax (PBIT)	5621	6526	3429	3037	2768	2299	1837	1557	1331	1271
Profit before Tax	4905	6021	2931	2360	1910	1721	1519	1296	1064	1011
Profit after Tax	2805	3621	1441	1110	850	866	679	576	529	451
Dividends	1325[3]	1352	738	616[2]	378	378	340	340	303	303
Retained Profits	1480	2269	703	494	472[4]	488	339	236	226	148
SOURCES AND APPLICATION FUNDS										
Sources of Funds										
Share Capital	4415[3]	2473	2473[2]	1553	1553	1512	1512	1512	1512	1512
Reserves and Surplus	3977	4559	2290	3107	2500	2323	1836	1490	1254	1027
TOTAL SHAREHOLDERS' FUNDS	8392	7032	4763	4660	4053	3835	3348	3002	2766	2539
BORROWINGS	6323	2943	1560	2353	4341	3398	1711	1179	1604	2078
FUNDS EMPLOYED	14715	9975	6323	7013	8394	7233	5059	4181	4370	4617
APPLICATION FUNDS										
Gross Fixed Assets	4609	4250	3857	4627	4461	3693	3082	2281	1826	1785
Depreciation	2710	2462	2207	2451	2145	1491	1174	999	910	815
NET FIXED ASSETS	1899	1788	1650	2176	2316	2202	1908	1282	916	970
INVESTMENTS	176	676	91	423	352	27	19	19	19	19
Gross Current Assets, Loans & Advances	24761	13194	9732	8588	9724	9837	6506	5988	5978	6552
Current Liabilities and Provisions	12121	5683	5150	4174	3998	4833	3374	3108	2543	2924
NET CURRENT ASSETS	12640	7511	4582	4414	5726	5004	3132	2880	3435	3628
NET ASSETS EMPLOYED	14715	9975	6323	7013	8394	7233	5059	4181	4370	4617
RATIOS										
PBIT to Sales (%)	10.2	10.2	8.6	8.4	7.4	7.0	7.2	7.2	7.2	6.5
PBIT to Net Assets Employed (%)	38.2	43.6[1]	54.2	43.3	33.0	31.8	36.3	37.2	30.5	27.5
Profit after Tax on Shareholders' Funds (%)	33.4	34.3[1]	30.3	23.8	21.0	22.6	20.3	19.2	19.1	17.8
Earning per Equity Share (Rs.)	6.35[3]	9.84[1]	5.87[2]	7.24	5.54	5.73	4.49	3.81	3.50	2.99
Dividend per Equity Share (Rs.)	3.00[3]	3.67[1]	3.00	2.50[2]	2.50	2.50	2.25	2.25	2.00	2.00
Net Worth per Equity Share (Rs.)	19.01[3]	28.59	19.34[2]	30.26	26.31	25.36	22.14	19.85	18.29	16.79
Debt : Equity Ratio	0.8:1	0.4:1	0.3:1	0.5:1	1.1:1	0.9:1	0.5:1	0.4:1	0.6:1	0.8:1

1. Ratios based on annualised figures for 78 weeks ended 24th December, 1988.
2. After considering 3:5 Bonus Issue in August, 1986.
3. After considering 4:5 Bonus Issue in July, 1989.
4. Does not consider loss of Automotive Unit for the previous period ended 30th June, 1984 amounting to Rs. 216 lakhs.

Annexure-6

Brooke Bond India Ltd.

Balance Sheet as at 30th December, 1989

LIABILITIES		Rs. Lakhs 1989	1988	ASSETS		1989	1988
Share Capital	(1)	4415.46	2473.03	Fixed Assets	(6)	1898.87	1787.67
Reserves and Surplus	(2)	3976.85	4558.98	Investments	(7)	176.48	676.46
Secured Loans	(3)	5374.61	2326.09				
Unsecured Loans	(4)	948.66	617.06	Current Assets	(8)	2112.22	11029.50
Current Liabilities and Provisions	(5)	12120.63	5682.51	Loans and Advances	(9)	3648.64	2164.04
		26836.21	15657.67			26836.21	15657.67

The numbers in brackets refer to Schedules which, along with Schedule (20), form part of the Balance Sheet. Figures for the previous period of the Balance Sheet and the schedules mentioned above are as at 24th December, 1988.

Annexure-7

Brooke Bond India Ltd.

Profit and Loss Account for the 53 weeks ended 30th December, 1989

			Rs. Lakhs		
			53 Weeks ended 30th Dec. 1989		78 Weeks ended 24th Dec. 1988
Income					
Sales	(10)		53942.35		62630.37
Other Income	(11)		1232.35		1263.84
			55174.70		63894.21
Expenditure					
Materials	(12)		30888.19		34599.80
Expenses	(13)		18361.78		22439.49
Interest	(14)		715.28		504.72
Depreciation			285.27		361.34
			50250.52		57905.35
			4924.18		5988.86
Provisions Made					
Doubtful Debts and Advances			9.33		27.07
			4914.85		5961.79
Provisions Withdrawn					
Doubtful Debts and Advances			6.81		50.95
Net Profit on Fixed Assets sold/discarded			5.13		8.35
Loss on Investments sold			21.27		—
Profit before Taxation			4905.52		6021.09
Provision for Taxation	(15)		2100.00		2400.00
Profit after Taxation			2805.52		3621.09
Investment Allowance Reserve Written Back			60.00		8.25
			2865.52		3629.34
Appropriations to					
Capital Redemption Reserve					—
Dividends (subject to deduction of Income tax)			20.00		
Equity—Interim		662.32		858.56	
Cumulative Preference		0.58		3.30	
Proposed:					
Equity—Final		662.32	1325.22	490.61	1352.47
General Reserve			1520.30		2276.87
			2865.52		3629.34

The numbers in brackets refer to schedules which, along with Schedules (16), (17), (18), (19) and (20), form part of the Profit and Loss Account.

Figures for the previous period of the Profit and Loss Account and the schedules mentioned above are for 78 weeks ended 24th December, 1988.

CEL : TECHNOLOGY DEVELOPMENT & ABSORPTION

Central Electronics Limited — Profile

Central Electronics Limited (CEL), a public sector enterprise of the Department of Scientific & Industrial Research was established at Sahibabad. Up in 1974, with the objective of productionising the designs and processes developed by our national R&D laboratories. During the first decade of its existence, CEL brought into the market a great variety of products, producing them in the low volumes that the nascent electronics market was capable of absorbing, and generally competing with specialist companies abroad selling to a world-wide market. As a result, CEL came to be recognised as a technology-oriented company, which had painstakingly acquired skills and perfected technologies in several new and emerging areas. However, annual turnover remained at only a few crores of rupees, in spite of the impressively vast product portfolio.

At the beginning of the Seventh Five Year Plan, CEL conducted an intensive and soul searching review to determine the directions in which it should move so as to increase the satisfaction to its stake holders — the clientele who bought from CEL, the government which owned the equity, CEL's suppliers and its employees. This review indicated that the Company should aim at excellence in a few carefully chosen areas, in which the likely demands of the market place were well matched to CEL's existing strengths. The emphasis on technology should continue, but with greater attention to market realities and with better networking between interested agencies.

CEL's Mission

TO ACHIEVE EXCELLENCE IN THE TECHNOLOGY, MANUFACTURE AND MARKETING OF RENEWABLE ENERGY SYSTEMS AND SELECTED ELECTRONIC MATERIALS, COMPONENTS AND SYSTEMS

clearly spells out the new focus and the interrelation of factors. With such an overall reorientation, CEL grew rapidly during the Seventh Plan (1985-1990), increasing its annual turnover by roughly a factor of eight through timely induction of several high technology products to be a Rs. 25 crore Company.

Market Driven Technology Development

By constant and critical examination of the market place, a company can determine the needs that will be possible for it to satisfy. Interaction with end-users and those in the distribution chain will identify the exact need of the buyer segment, the features that would be sought, the way the need is presently met and other products/services competing for the same resources. From this information, product specification, price target, identification of technologies required, production and marketing plans, etc. can be drawn up. A budget for time and other resources will also emerge.

Any product goes through induction, growth, maturity, decline and decay phases which taken together constitute the product life-cycle. R&D time should be short compared to such life-cycle. This however calls for early induction into the market of the company's product as against that of a competitor with corresponding prospect of large market share and hence larger revenues during the maturity and decline stages.

A variety of skills need to be assembled before technology development can proceed in an integrated manner. If one were to develop a process, expertise on plant engineering utilities, instrumentation/control by-product utilisation, environmental engineering and material science, are as necessary as the basic process capability itself. Similarly, for developing a product, one needs a thorough understanding of the state-of-the-art in components and materials fabrication techniques as also product evaluation techniques. Skills in production engineering, jigs and tools, value engineering and product styling are also necessary.

All skills needed for technology development should be close to hand; many should be in-house but some can be located nearby. It should be recognised that certain types and levels of expertise will be often required so as to get the necessary objectivity or involvement. Hence extension of linkages from the core group developing the technology to other specialised groups (such as Universities, Test Centres, Standards Laboratories, Consultancy Agencies) should be planned and encouraged from the inception itself.

Used with permission. We thankfully acknowledge the co-operation extended by the management of CEL in permitting us to use the case.

Indigenous development of technology has several built-in advantages. Generally, the trained, competent manpower with the requisite mix of skills is available readily. Intra-institutional ties with their several benefits are easily set up. The product that is developed is more likely to fit in with the local culture than one for which the technology is imported. So, provided one avoids pitfalls such as sub-optimal effort, non-recognition of the product life-cycle, non-exposure to state-of-the-art, isolation from cross-fertilisation and non-establishment of needed linkages, technology development programme can be mounted successfully.

In the interest of reducing the development time or cost, or of lowering the risk, several options such as acquiring part of the technology from abroad or of contracting out a portion of the development can be considered as relevant to each case.

A few case histories given below illustrate CEL's experience in Technology Generation and Absorption and highlight the use of the overall strategy and general principles described above.

Ferrites — A Classical Innovation Chain

CEL is the largest producer in India of professional ferrites. The technology development took roughly a decade while product life is expected to be several decades. The laboratory and pilot plant scales of development for the ferrite-making-process were undertaken in the National Physical Laboratory (NPL) of CSIR during the early 70's. The personnel involved were then transferred to CEL, where they set up and operated a production facility, while carrying out development of newer ferrite materials, more ferrite products, more innovative applications of ferrites as well as investigation of alternative raw materials and cheaper production process. Agencies such as DST, DSIR DOE and NPL were actively involved throughout the programme so as to secure technical evaluation, marketing and other supporting inputs. As a result of this well orchestrated indigenous technology development programme spanning more than 10 years, a technology which was closely held even abroad has been developed and is in large-scale use in India. The innovation chain, going from invention to market testing to pilot production to supply so as to satisfy the market need as shown in Figure 1 has been fully traversed.

Figure 1 : The Innovation Chain
Research Through Development to Use

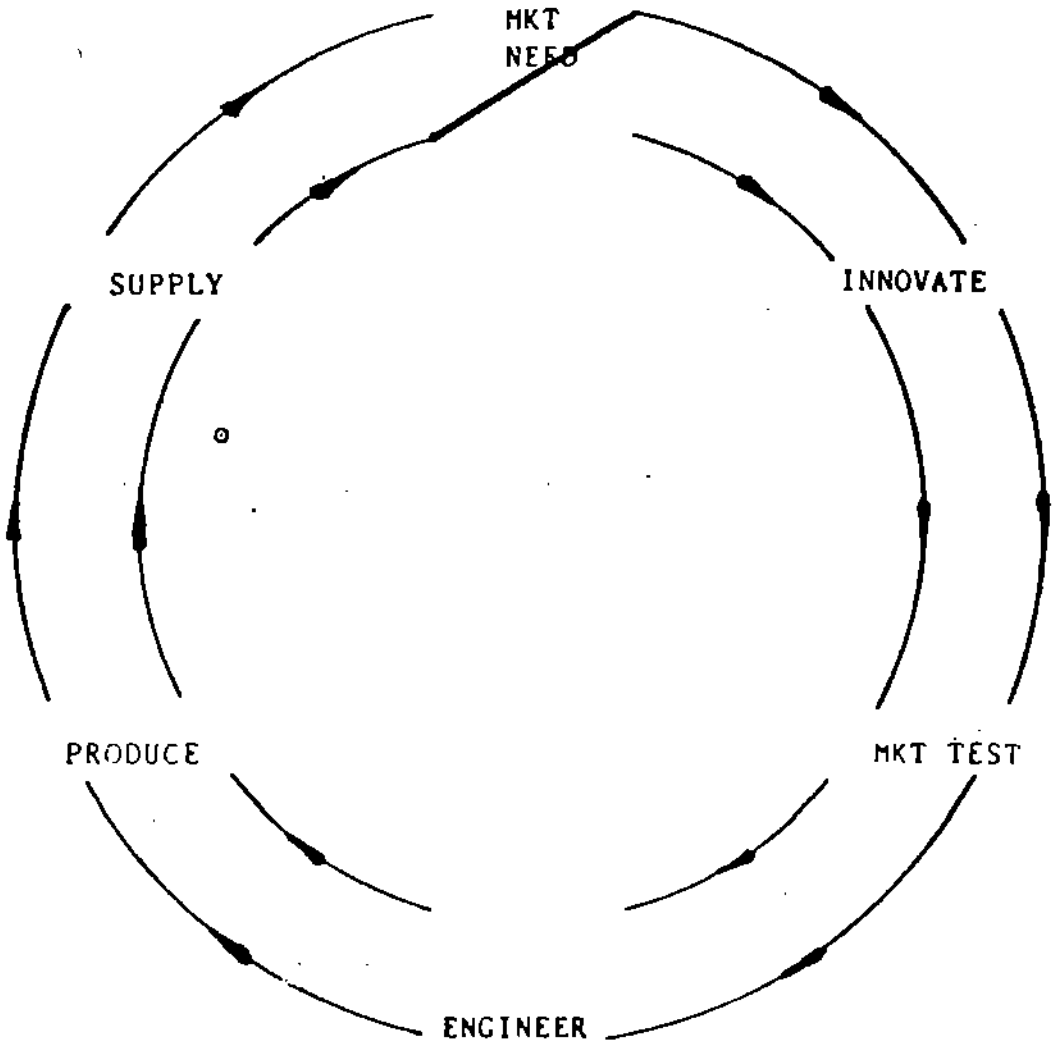
	Phase Description of Activity	*Nature of Activity*
	1. Scientific principle innovation of discovery of a new phenomenon	A pure research without industrial motive
	2. Preliminary measurement and analysis	
	3. Basic research necessary to get an understanding of the phenomenon	B Applied research where scientific staff trained in A are required
This is the area where close attention by policy management first appears	4. Construction of first workable model with application and mind	
Improvements and modifications	5. Development of prototype for demonstration	
	6. Demonstration and evaluation to assess value for production	C Development by Engineers with production in mind
	7. Engineering Design of production models	
	8. Tooling and manufacture	
	9. Inspection, quality control and testing	D Manufacture, marketing and use
	10. Marketing and acceptance by the public buyer	

Projection TV — An Example of the Innovation Spiral

In the case of a product with a short life-cycle no sooner has the innovation chain been traversed than the market requirements change somewhat and so it becomes necessary to go through the chain once again in order to make a more contemporary product. The innovation now proceeds on a spiral as shown in Figure 2. The Projection

Television (PTV) system produced by CEL is a classical outcome of this process. CEL developed a black-and-white PFV in the early eighties, but found that it was not very relevant as colour telecasting had come into vogue. Being aware of the market need which could not be satisfied in time by a further technology development on its own, CEL acquired PTV production technology in 1986 from a foreign source for a single model. The Company has since gone around the innovation spiral twice — once for fine tuning the product for the Indian market and once again for developing a whole family of PTV, offering several sizes, modes of projection and grades of performance. As a result, CEL has now introduced two models — one a High Resolution model ideally suited for Computer graphics projection and the other of 2 to 4.5 meters diagonal screen size meant for auditoria and video parlours.

Figure 2 :



Innovation Spiral.

Colour TV Receiver — Product Life-cycle Mismatch

A colour TV set, developed at CEERI, Pilani of CSIR in the early 80's was taken on by CEL for production. CEL found that the state-of-the-art for components had since changed and so had to redesign the set. Also the product had to be re-engineered to meet national specifications which had been notified by that time by the Department of Electronics. The aesthetics and ergonomics also had to be brought in line with the market demand. Production engineering had to be carried out and production documentation created. These activities were all successfully compressed into a mere 18 months over 1985-86. Meanwhile, several companies had already entered the colour TV market and had established a substantial presence with significant market shares. Hence, even though CEL had a very good product to market, the risks of entering the market at that late stage were

considered unacceptable. Hence product launch on a large-scale for the metropolitan consumer market was aborted. However to meet the needs of small town and rural areas, CEL has developed a special type of colour television set of low power consumption powered by solar cells. Data sheet of this colour TV receiver the first of its kind in the country is given at Figure 3. This case history clearly shows the importance of product life-cycle in setting the R&D time targets.

Ferrite Phase Shifters — Marrying Strengths to Opportunities

A strength of CEL was ability to formulate ferrite material capable of producing ferrites of almost any desired characteristics. Due to its excellent understanding of the material science involved, and its extensive practical experience, CEL had perfected this strength. The Company was also good at fabricating ferrites to intricate shapes and closely held tolerances. Using these strengths CEL was able to glean a very good opportunity to develop sophisticated microwave components for use in advanced Defence Radars. CEL had to team with several DRDO agencies and two IITs to achieve this goal. Due to the untiring and harmonious efforts of this multi-institutional team, another technology very closely held abroad even today, is available to us and volume production is to start shortly after successful pilot production.

Piezo Ceramics — Technology Blending

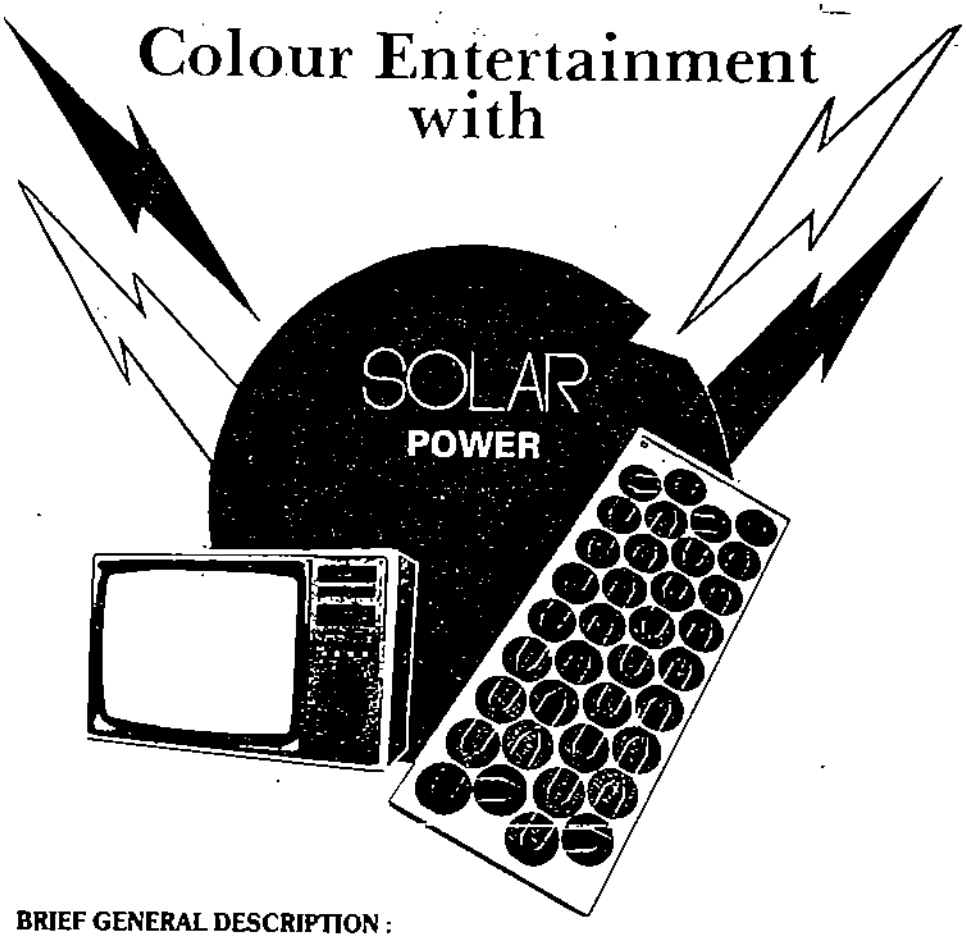
CEL had developed piezo-ceramics in the early 80's. It was hoping to find a large market for piezo-ceramic elements as ultrasonic transducers and gas lighters. However, these two markets did not materialise due to several market and commercial considerations and CEL had to be content with making only a small number of specialised assemblies for reference. In 1985, CEL saw an opportunity for the large-scale induction of piezo-ceramics as transducer elements in the electronic push-button telephones for the manufacture of which technology was being inducted from abroad. Though the telephone manufacturing technology was being distributed to several manufacturing agencies, DOE, the coordinating ministry chose CEL as the sole company for procuring from the foreign technology vendor mass manufacturing technology for the piezo-ceramic diaphragm which is used in both the transmitter and receiver capsules. This was done in view of CEL's longstanding experience in this specialised area. Thereupon, CEL entered into an excellent technology transfer agreement but simultaneously also developed on its own, a similar technology on a pilot plant scale. This hands-on approach has certainly enabled the foreign collaborator to appreciate CEL's strength and for CEL to better negotiate and then start absorbing the technology. As a result, discussions between both parties has been based on mutual respect and the technology transfer is proceeding in smoothly, leading to hitch-free mass production a difficult, high technology item. This case proves that there are occasions when a judicious blend of locally developed and foreign technology can be particularly effective.

Railway Electronics — The Importance of an Integrated Approach over the Innovation Chain

There are several end-users, who over the years, have developed the expertise to forecast the type of products to meet their future needs. One such agency is our Railways. For ensuring the safety of passengers and rolling stock, the Indian Railways wished to induct certain sophisticated electronic equipment called Axle Counters. CEL had good production expertise for this class of equipment. The Research Designs and Standards Organisation (RDSO) of the Railways possessed specialised expertise regarding the design and proving out methodology for equipment which will always attain safe states on failure as in the case of Railway Safety Equipment. IIT, Delhi had an excellent design team capable of designing modern digital signal processing equipment. To address the new opportunity which the proposed induction of Axle Counters offered, CEL felt that it was best to adopt a team approach along with RDSO and IIT. Accordingly, a team of engineers from CEL were posted at IIT in 1983 and the IIT/CEL team undertook joint design, development and prototyping activity. The availability of design and product engineering/industrial prototyping skills at one location facilitated the paralleling of several activities which otherwise would have had to be undertaken in serial orders thereby resulting in extending the total R&D time involved. The on-line availability of RDSO to critically comment and evaluate the design at all stages enabled several quick iterations of the design to be made and prototyping fully completed to Railway specifications in a matter of only 18 months. The close involvement of Railway Board, DOE, DST & DSIR ensured all the support that was needed. The product so developed has since been successfully mass manufactured by CEL and extensively deployed by the Railways. Most importantly, it has performed fully according to expectations. Encouraged by this success, development of technology for the next generation of Axle Counters was structured on a similar basis with CEL, IIT & RDSO as partners, even as the first generation design went into volume production. Several other electronic railway signalling and safety systems have also been developed on the same basis. This experience taught CEL the value of appropriate linkages in the development of technology.

Figure 3 :

Colour Entertainment with



BRIEF GENERAL DESCRIPTION :

CEL DC powered Colour TV is optimally custom designed for Photovoltaic applications. It operates on 24 V batteries and consumes a mere 40 watts of power. Low power consumption has been achieved by judicious selection of components and use of a super efficient DC to DC convertor for powering the various circuits.

Plug-in modular concept for electronic modules has been adopted for ease of servicing, an important requirement for such remotely installed CTVs. State-of-the-art components have been used for excellent performance and high reliability.

SOLAR C.T.V. SPECIFICATION

1.	Screen Size	: 51 Cms
2.	Colour Receiving system	: CCIR PAL System B&G
3.	Receiving channels	: VHF : 2-12 : UHF : 21 to 69
4.	Channel Selector	: 8 Soft Push-buttons for presetting the channels and bands.
5.	Audio output	: 3 W music power
6.	Input voltage range	: 22 V to 30 V DC
7.	Power consumption	: 40 Watts max.
8.	Input source	: 24 Volt batteries, 60 AH
9.	Battery charging source	: 60 W P Solar panel (4 hours operation per day)
10.	Degaussing	: Highly efficient automatic internal degaussing system.

Picture Tube Phosphor — A Quest for the Right Linkages

NPL of CSIR had developed a bench scale process for making TV picture tube phosphor. NPL licensed this technology to a small-scale entrepreneur, who could not set up a manufacturing plant due to the complexities involved in up-scaling. Meanwhile, certain rationalisation were made by the Government on the import duty on TV picture tube phosphor, which rendered the indigenous project economics unviable. So, though product made with laboratory grade chemicals at NPL on a laboratory scale was found to be satisfactory by one user NPL was not pursuing taking the process to commercial fruition.

CEL, which was trying to expand its product portfolio, was interested in the production of picture tube phosphor. It studied the process adopted by NPL, which required scaling up by a factor of 100 for commercial production. CEL concluded that, if commercial grade chemicals could be used and the purity of the phosphor still maintained, the project's techno-commercial viability could be assured. It also noticed that meanwhile other picture tube manufacturers than the one which found the NPL product acceptable, had come on the scene. (At this stage, other more attractive investment opportunities became available to CEL and hence, at the instance of DSIR, NRDC came in to ensure further development of the phosphor technology and retained CEL for technical consultance.

Engineers India Limited was also brought in for process development up-scaling and engineering. With CEL & EIL backing the technology development NPL was asked to restart its process development using commercial rather than laboratory grade raw materials, procured in bulk by CEL. The process was fine-tuned to ensure production of satisfactory phosphor, and the phosphor produced was tried out by leading TV picture tube manufacturers and found satisfactory.

While EIL engineered the up-scaled process, it was found that the viability of the process critically depended on selecting and sizing certain key furnaces. CEL, which had considerable expertise in this type of line because of its heavy involvement in black ceramics (ferrites) and white ceramics (piezo-ceramics & alumina), was able to perform this specialized task.

The upshot of the exercise was a thoroughly revamped, professionally documented, known-to-be-viable process, with the customers fully conditioned to accept the end product. As a result NRDC has been able to license this technology to set up a 60 tons/annum plant which is to come up in the clean environment of Himachal Pradesh.

This experience drove home to CEL the need to actively look for and secure the involvement of agencies who can contribute different elements/segments of the innovation chain if world-class technology is to be developed. The game is indeed complex and needs a team of players, each with his own expertise to win. The lone player has little chance of success.

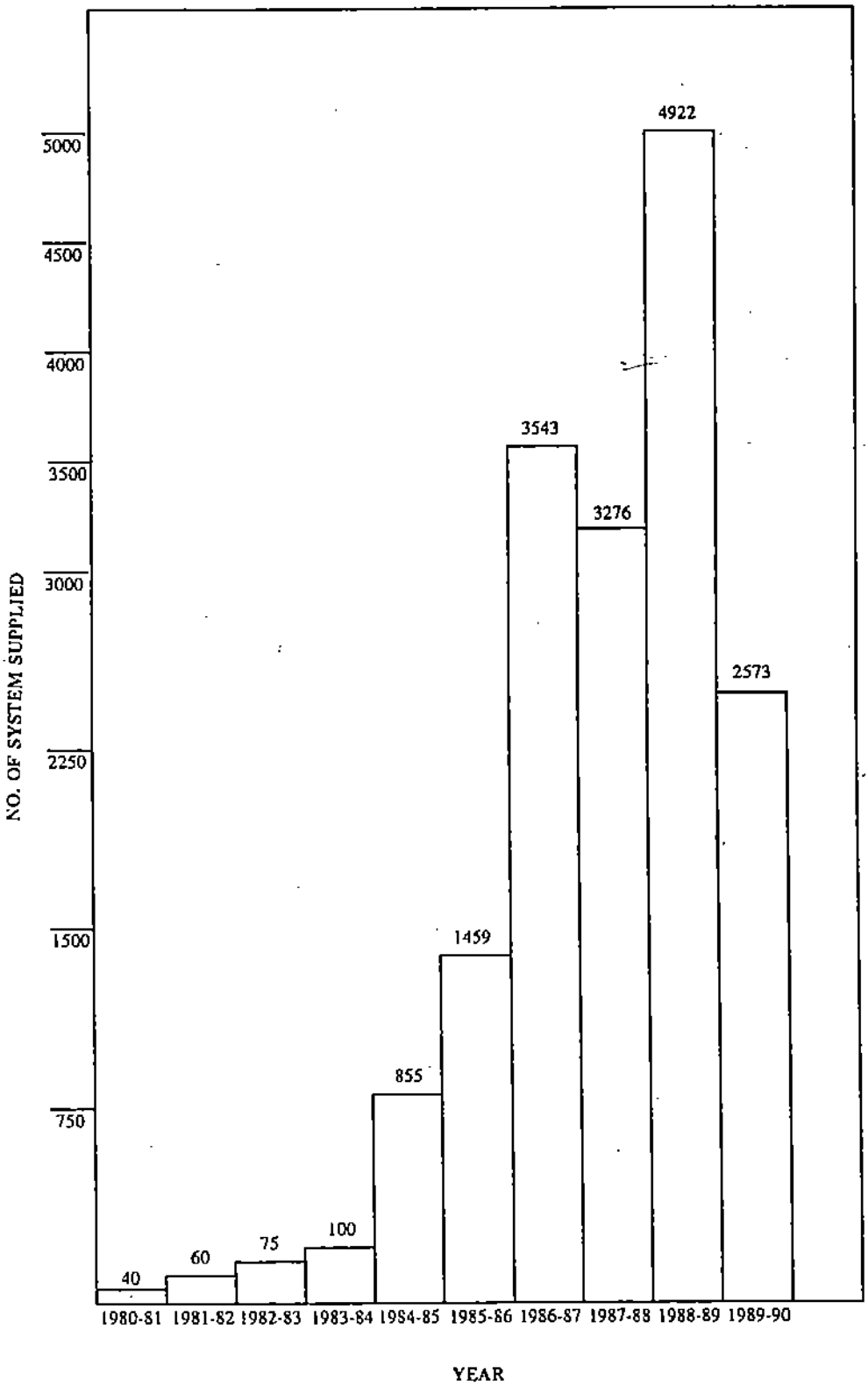
Solar Photovoltaics — A Leading Edge Technology

Perception of opportunity at the earliest, and tenacious pursuit of the opportunity by an integrated clear-cut programme of technology development/absorption are necessary, but not sufficient for commercial success. As in the case of competitive sport, timing is also an equally vital ingredient. CEL's experience of over a decade in Solar Photovoltaic (SPV) Energy Systems illustrates how an opportunity perceived well ahead of time gave shape to a large, concerted technology development programme. It also shows how, by timing the key events carefully, CEL has been able to achieve the position of the world's fourth largest SPV company, with strength in materials, cells and modules production, systems design, supply of systems and field support of products in the field, all on a fully vertically integrated basis.

During the late 70's, CEL and its then administrative ministry, DST, saw that Solar Photovoltaics Energy was likely to be a sophisticated technology — the development and mastering of which would be immensely useful for our country, with its enormous need for energy in rural and remote areas. While the fabrication of the primary energy conversion device, viz. the solar cell is essentially a semiconductor process, the interconnection of cells into usable modules (called encapsulation technology), the design and manufacture of SPV systems, which tend to be location and load-specific require several types of systems — engineering and product manufacturing technology. The installation, maintenance and other product support activities need field engineering expertise.

While the types of skills needed for successful development of SPV technology were clearly seen, it was obvious that almost all of them were not readily available and would have to be developed and honed from scratch without getting bogged down by the magnitude and complexity of the job. Encouraged by the exciting long-term vision of such a goal, CEL mounted a comprehensive skill building and technology development programme. The programme was closely supported by DST and by DNES which was spun-off from DST. DNES made CEL the

Figure 4 : CENTRAL ELECTRONICS LIMITED
YEAR-WISE SPV SYSTEM SUPPLY



implementing agency for the National Solar Photovoltaic Energy Demonstration (NASPED) Programme. The newly constituted DSIR, which became CEL's administrative ministry in early 1985 provided every possible input and monitored the progress regularly. The Administrative Ministry also gave concrete demonstration of its commitment to CEL's SPV programme by sanctioning CEL's major project to set up a plant with an ultimate production capacity of 5 MW of solar cells per year at a time the entire world's production was of the order of 10 MW per year.

CEL realised that in a frontier technology, several aspects normally kept separate, had to be closely intertwined. Typically, process innovation in cell technology, the actual manufacturing of SPV cells, the up-scaling of plant capacity, and development of special manufacturing machinery, had to be dealt with as a composite whole and not as different entities. The manufacturing process for cells was therefore virtually developed on the production levels themselves wholly in an industrial environment and on a large-scale. The product technology developed in-house had to be evaluated in the field before the product could be put into volume production. CEL has gone through several generations of the cell manufacturing process over the last 6 years. It has a 2 MWp facility churning out SPV products to international standards. Approximately, 17,000 CEL-made SPV systems for covering some 35 different types of applications and rural and industrial applications are at work all over India and in quite a few other developing countries. Figure 4 indicates the total No. of SPV systems made and sold during each year of the 7th Plan. In the International Solar Photovoltaic market place, CEL has carved out a leadership position for itself by simultaneous development of skills, processes and products, by massive, well-focused long-term programmes and by careful timing of its activities. Recognising that in such frontier technologies, the linkages need to be international than national, CEL has established links and collaborative programmes with numerous agencies both at home and abroad.

Figure 5 illustrates the range and diversity of CEL's SPV systems., They have all exploited a mix of modern technologies through innovative design, and achieved objective not feasible by other technologies within economic cost.

Figure 5 : Applications of CEL made Solar Photovoltaic Modules and Systems

1. Unmanned Off-Shore Oil Platforms
2. Cathodic Protection of Oil and Other Pipelines
3. Fossil-Fuel Dispensing Station
4. Hydro-Meteorological Stations
5. Data Collection Platforms
6. Very Low Power Television Transmitters
7. Direct Reception Television Sets
8. Black & White and Colour Television Receivers
9. Public Address Systems
10. Transistorised Radio Receivers
11. Telecommunication and Telemetry
12. Battery Changing
13. Defence Applications
14. Applications by Paramilitary Forces
15. Powering of Electronics on Lighthouses
16. Railway Platform Lighting and Panel Interlocking
17. Warning Signal for Unmanned Railway Level-Crossings
18. Applications in Antarctica
19. Application in the Mount Everest Expedition
20. Village Electrification
21. Water Pumping for Irrigation
22. Water Pumping for Drinking Water Supply
23. Water Purification System
24. Deep Well Water Pumping
25. Village Street Lighting
26. Domestic and Community Lighting
27. Medical Refrigeration
28. Power for Transportation
29. Electric Fencing
30. Burglar Alarm
31. Solar Clock

Solagard: An Example of Cross Fertilisation

As discussed earlier CEL had been operating extensively both in Railway Electronics and in Solar Photovoltaics. It was therefore, but natural for CEL to see if, by combination of the technologies involved, new products could be developed in the service of its clientele.

A systematic review of the requirements of the Railways revealed that there existed the need for a rugged automatic stand alone system that would warn road users of the impending arrival of trains at some 9400 level crossings in our country. CEL, therefore, launched on the development of a product to "guard level crossings". It harnessed digital signal processing, modern VHF radio and SPV technologies to produce an innovative product which is patented and trademarked as SOLAGARD. With intensive, on-line support from several Railway Agencies, the product was designed, proven out and engineered for bulk production, all in matter of 2 years. By being alive to all prospects of cross-fertilization CEL has been able to innovate a brand-new product, to fill a long-standing need and chalk up a world first in innovation.

Conclusion

Adopting a multi-dimensional technology strategy of the kind indicated above, CEL has been able to increase its turnover from Rs. 2.75 crores in 1984-85 to around Rs. 26 crores in 1989-90. Around 90% of that turnover in 1989-90 has been based on indigenous technology of one type or another which has been made possible because of a sustained high level R&D investment. Using such a base as a launch pad, CEL has kept a turnover target of 70 crores in the last year of 8th plan period with steep increases in output of all its product lines.

As the above case histories will show technology development, absorption and utilisation are indeed vital functions for any commercial organisation. By giving technology its due emphasis while letting it to be driven by market considerations, a powerful genie can be harnessed to serve industry, the economy and the nation.

EICHER TRACTORS INDIA LIMITED

Historical Background

Eicher Tractors India Limited was floated in 1959 by the Goodearth Company. The latter had been engaged in the business of selling imported tractors. In 1948, Mr. M.M. Lal, the founder of the company had taken up the dealership of Ferguson tractors for a few districts each in Western U.P. and the areas now in Haryana. Tractors at that time had a "curiosity value" and a market had to be developed for a large-scale business. Mr. Lal found the tractor distributorship to be profitable and in 1952 he decided to import tractors on his own.

In 1952, the Goodearth Company imported a few tractors from Gebr. Eicher of West German to "test market" them. The market response was good and from 1953 onwards the company imported these tractors in large quantities. The imports in those early years were in the range of 100 to 200 a year. It never went beyond 300 a year. A good workshop was set up for repairs and maintenance, and training of farmers and mechanics. Import of complete tractors went on till the end of 1956 after which the liberal import of tractors through normal trade channels ended on account of stringent foreign exchange situation. Around this time Mr. M.M. Lal started considering manufacture of tractors in India. Around 1957-58 he went over to West Germany to explore the possibilities of a collaboration with Gebr. Eicher, for the manufacture of tractors to their design and specifications. Simultaneously he applied to the Government of India for an industrial licence. Towards the end of 1958 the Government issued an industrial licence for the manufacture of tractors.

Product

At the time Mr. M.M. Lal started considering the import of tractors, most agriculturists in the country depended upon "human" and "animal" power. Indian farmers had not been exposed to mechanization of agricultural operations, and were, therefore, apt to put the tractor to abuse. There were almost no facilities for maintenance of tractors. The level of technical skill possessed by the farmer was very low. Mr. Lal realised that a tractor was required which could withstand various types of use and abuse like pushing heavy loads, pulling trailors, various farm operations, etc. Ease of maintenance even with poorly trained village mechanics, low price and low operating costs were major characteristics, which Mr. Lal looked for in his extensive tour of Europe for a suitable tractor. The Eicher tractor fulfilled these requirements. It was rugged in design, it could be easily maintained by farmers with a low level of technical skill and was low priced. In fact till recently the Eicher Tractor was the lowest priced one in the country.

The tractor was powered by a single cylinder air cooled engine and had a minimum number of moving parts. It did not have a hydraulic system for implement control, whereas by 1960s almost all tractors in the developed countries had incorporated this in their designs. In other words, the tractor model selected for manufacture in India was comparatively an obsolete model. The Tariff Commission reported:

> *The tractor manufactured by the Indian company is based on the drawings and technical specifications of its West German collaborators and is comparable with a similar model of farm tractor which the German firm was formerly manufacturing. It may, however be noted that the German collaborators are no longer manufacturing tractors of specifications adopted since they have brought out multi-cylinder and more sophisticated tractors for German market, which do not bear any comparison with the erstwhile German model and the present Indian one.*

This case has been written by Prof. Shekhar Chaudhuri for the purpose of class discussion.

Case material of the Indian Institute of Management Ahmedabad, is prepared as a basis for class discussion. Cases are not designed to present illustrations of either correct or incorrect handling of administrative problems.

Foreign Collaboration

Gebr. Eicher of West German started as a small venture just after World War II. It had a very low production volume of about 3000 tractors per annum. Because of the simplicity of design and low production volume, the machinery used were mostly general purpose type and less sophisticated. The manufacturing technology used by them was compatible with the level of technological skills available in the automobile ancillary industry in India and their production volume matched Eicher India's licensed capacity of 2000 tractors per annum.

A collaboration agreement was signed in 1959, which ended in April 1973. It was a financial-cum-technical collaboration, the collaborators were given a share in the share capital of the company and the right to nominate two of their representatives on the Board of Directors. According to the agreement, Gebr. Eicher of West Germany was required to, i) supply the documents and drawings for the manufacture and assembly of tractors, ii) supply critical components till they were progressively indigenized, iii) help in establishing production and assembly operations in India, iv) supply all drawings and documentation of jigs, fixtures, and v) train engineers of Eicher India at their works.

A royalty of 2 per cent was payable on ex-works cost of components manufactured in India. Another 2 per cent was payable as technical know-how fee.

The German collaborators sent a few technicians to the Indian company during the initial years to help in setting up the assembly operations. However, before much progress could be achieved in setting up the operation, the collaborator ran into a number of problems. According to Mr. Vikram Lal, the present Managing Director:

> *... in the 1960s, Gebr. Eicher were on a downward trend – sinking market share – inadequate technology –they could not put any money into development of new products. In 1970 Gebr. Eicher was bought over by Massey Ferguson of Canada. Our collaboration continued from 1959 to 1973 .... However, the collaboration was not very satisfactory as both were beset with problems. Ours was production, import licence availability, finance, etc. Theirs was basically marketing. They gave us the drawings, and documentation and also were prepared to train our engineers at their works. But, because of lack of funds we could manage to send only 3 persons for a few weeks only. During the initial stages pilot components used to be sent to Gebr. Eicher for testing. Now we are supplying them some components, which have been commended by our collaborators for their quality.*

Manufacturing Programme

PLANT CAPACITY

Initially the Government had issued an industrial licence to Eicher Tractors India Ltd. for manufacturing 1250 tractors per annum, which was later on increased to 2000 tractors per annum. Compared to the average production capacities of over 30,000 tractors per annum of major manufacturers in America and Europe, Eicher Tractor India's licensed capacity was very small. But because of difficulty in getting import licences for CKD packs and their lack of technical and managerial expertise, the production volume never went beyond 200 tractors per annum for the first few years.

PHASED INDIGENIZATION

The company started production on 3rd September, 1960. The manufacturing programme as approved by the Government envisaged the following progressive indigenization:

Year	Indigenous content
1st	48.6%
2nd	79.5%
3rd	100.0%

Implementation of this rapid indigenization programme was, however, fraught with numerous difficulties.

The balance of payment situation of India had started deteriorating in the late fifties. Simultaneously, Government ended the liberal import facilities to conserve foreign exchange. This had serious repercussions on the operations of Eicher Tractors India Ltd. In the word of Mr. Vikram Lal:

> *The production was limited to a very few items. A situation of crisis continued for the next few years. It was a situation of living from hand to mouth. Foreign exchange was not available. The Government allowed CKD packs for 150-200 tractors a year and this production level went on for six years.*
>
> *Neither my father nor the collaborators had understood that foreign exchange availability would be such a problem. He thought that as the industrial licence was for 1250 tractors/year, import of CKD packs would be available to that extent. Eicher (Germany) had specially produced 1250 almost complete tractors for us, but those had to be kept in stock in Germany as we did not have the licence to import them. The collaborator's financial position was upset by this....*
>
> *We did not have the proper infrastructure required for the challenging task of indigenization as stipulated by government. The infrastructure required was in terms of proper and adequate engineering staff, tool room facilities, purchasing and vendor development staff, etc. All these functions in the company were skeletal in nature. The low production volume, because of the small import licences, could not sustain a larger personnel strength required for the rapid indigenization programme....*
>
> *On continuous representation to Government, we were finally given an import licence for 1200 CKD packs... . In a period of 3 to 4 years losses kept on accumulating and if depreciation had been provided the total accumulated losses in 1969-70 was double the paid up capital.*
>
> *In the words of the Production Manager:*
>
> *In the first phase most of the simple sheet metal components were indigenized. These were the mudguards, bonnet, fuel tank etc. The engine coupled with the transmission used to be directly imported from the collaborators' works. Also along with these some of the complicated items like mud-guard tops which required a sophisticated die used to be imported. This phase lasted until 1964. During this time we set up the fabrication shop and the tractor assembly shop.*

In 1966 the Government liberalised the import policy and import licences of CIF value of Rs. 51.47 lakhs for the import of essential raw materials and components were issued. Another import licence of the value of Rs. 38.89 lakhs was expected.

During 1967-68 machines worth Rs. 16.75 lakhs were installed to achieve indigenization of the tractor. They calculated the break-even point at about 500 tractors per year. The target for 1968-69 was fixed at 500 tractors.

In 1968 Government granted another import licence for Rs. 49 lakhs for the import of special steels, tools and components.

In the third phase the development of the engine was taken up starting with simpler parts like connecting rod, crank shaft, and then finally engine housing. By 1969-70 the whole of the engine had been indigenized and only the transmission remained.

Around 1970-71 some Indian companies started manufacturing gears. Efforts for indigenously manufacturing all the gears began and by around 1974-75 the company was successful in developing reliable sources for the same. An R&D cell specially for concentrating on developmental activities was created through which technical help was given to the gear manufacturers. A part of the suppliers' developmental expenses was also met by the company. Gears were completely indigenized by 1974-75.

Sources of Funds

According to the Managing Director of the company:

> *Our share capital was extremely small.... Another complication in the tractor industry was that prices and distribution was controlled. We were always extremely short of cash. The company would not have survived had it not been for the enormous goodwill it had with the dealers. We took advances from the dealers -- these were called security advances. That is a certain sum of money – about Rs. 4000 per tractor – was taken from a dealer for a period of 1 year in advance of delivery of tractor.. Prices of tractors had been maintained in those days at an artificially low level. This had the implication that we had constant cash problems. I do not remember a single day on which we did not have problems of either paying salaries, wages, government dues or creditors etc.*

The following table shows the major sources of funds for different years:

Table 1

(Rs. lakhs)

Details	1964	1965	1967	1970	1977
Share capital					
Authorised	25.00	100.00	100.00	100.00	100.00
Issued and subscribed	6.62	6.81	14.72	19.16	19.17
Secured loans	9.30	11.70	42.77	27.30 }	82.88
Unsecured loans	10.76	7.29	7.01	8.86 }	
Current liabilities	26.26	13.64	39.39	57.04	255.70
Reserves and surplus	1.74	1.60	2.08	2.08	94.47

Source : Annual reports

Plant and Machinery

One of the major tasks for Mr. Vikram Lal after he joined Eicher Tractors India Ltd. in 1968 was the selection of proper plant and machinery to increase production, which had remained extremely low for the past 8 years (Table 2).

Table 2

Production (July - June) (26.5 h.p.)

Year	Nos.
1960-61	132
1961-62	149
1962-63	214
1963-64	64
1964-65	225
1965-66	123
1966-67	92
1967-68	204
1968-69	346
1969-70	378
1970-71	859
1971-72	789
1972-73	854
1973-74	1081
1974-75	1232
1975-76	2142
1976-77	2719

Technically, there were three options in the choice of manufacturing technology:

1 Use of mass production technology using special purpose machines for all operations.

2 Use of only general purpose or universal machinery for all operations.

3 Use of combination of special purpose and universal machinery.

The first choice was immediately out of the picture as there were not enough funds to employ mass production technology and also the fact that at production volumes of 100 or 200 or even 300 tractors per year it would not have been economically justifiable.

Use of universal machinery exclusively was possible but the skill level required in certain operations would be very high and reliability of quality would be a problem. So the management considered the use of a composite technology, i.e., a combination of universal and special purpose machinery, to be a judicious solution.

A major factor that influenced the choice of plant and machinery was the acute paucity of funds, which was responsible for the evolution of a corporate philosophy of "low cost" in every endeavour. To overcome the problem of financial stringency, the management decided to purchase some second hand machinery from the collaborator which was available at very low cost. These machines were required for some of the critical operations, e.g. machining of connecting rod, cam shaft, etc.

Indigenous machinery available from well-known manufacturers like HMT or Kirloskar were too expensive which Eicher Tractors (India) could not afford. So a team of engineers along with the present managing director went around small-scale enterprises in Punjab to observe the machines and equipments they utilized. After studying their practices thoroughly the management decided to go ahead with purchase of very simple machines called *Addas* manufactured by the small-scale industry in Ludhiana and Batala in Punjab. These machines are basically the skeleton cast iron base of the lathes, drilling machines or milling machines fitted with very simple tool carrying heads. These *Addas* are basically universal machinery which can be tooled up for mass production of different items. The idea of the management was to design and manufacture proper jigs and fixtures by which the reliability of the operations could be enhanced. By this method the operations could be "de-skilled" to a certain extent.

The layout of the shop was designed in such a way that each component could be manufactured in a part of the shop, using a combination of these *Addas*. Using a combination of process and product line layout for certain critical components it was possible to increase the capacity of production with low capital expenditure in plant and machinery. The *Addas* cost them approximately Rs. 3000 and the special jigs and fixtures another Rs. 1000. The total cost of each *Addas* was Rs. 4000 whereas a machine from the established large machine tool manufacturer would have cost them Rs. 20000-50000. Capital expenditure on fixed assets is as shown in Table 3.

Table 3

Fixed Assets (Rs. lakhs)

(at cost less depreciation)

Year	Value
1964	6.86
1965	19.82
1970	26.58
1976 *	105.99
1977	154.95

* in 1976, land accounted for Rs. 4.0 lakhs, buildings Rs. 11.0 lakhs, and plant and machinery 71.3 lakhs after depreciation. Break-up for the other years was not readily available.

Source : Annual Reports.

A separate engineering team was created to cater to such needs as converting very simple universal machinery to single purpose machine by designing proper jigs and fixtures, copying attachments, hydraulic systems, etc. Also many of the complicated machinery were designed and manufactured in the company by a specially created cell. Machines like Dynamic Balancing Machine for balancing the crank shaft and the flywheel, Fine Boring and Lapping Machine for the cylinder head were designed and manufactured by the company's engineers.

The present managing director's philosophy has always been to economize on capital expenditures as expressed by the following quotation:

> *... why don't we acquire highly sophisticated equipment at every plant and add the usual frills like most large companies do? .... We did not wish to invest heavily in fixed assets, because we felt that we could not afford to do so without raising our prices. What originally started as a reasoning born out of paucity of funds has now become a philosophy of the company – the low cost approach in every endeavour. This is also in keeping with the needs of our country's developing economy where capital is scarce and therefore must be conserved.*

This philosophy continues even now, though the company has long turned the corner and is making handsome profits. To quote one example, the company plans to make a pressurised paint booth at a cost of approximately Rs. 8 lakhs, which if purchased from established manufacturers would cost them Rs. 16 lakhs. The new plant for the 35 h.p. tractor and the gear manufacturing which the company is putting up at Parwanoo will follow the same philosophy. They plan to purchase *Addas* of better quality which would give them higher reliability.

However, in the R&D department, their policy is to have sophisticated machines and their total investment in the R&D department is several times that in the production plant. Till recently the policy of the management was to subcontract as many items as possible to reduce the capital expenditure. This was possible till the production volume was quite low at around 2500-3000 tractors per annum. With increase in volume the management feels that the sensitivity of the manufacturing operations to supplier linkages becomes too critical and therefore to insulate themselves from such uncertainties they are in the process of creating some manufacturing base in the company for certain critical components. This, the management, feels will also act as a detterent against price increases by suppliers. The gear and transmission plant which is coming up at Parwanoo is part of such a policy. The engine plant at Alwar, was started to cater to the increasing volume and also to cater to the needs of other industries.

A machine tool manufacturing unit has been started to cater to the needs of machinery for the three plants at Faridabad, Alwar and Parwanoo. This machine tool unit had its genesis in the early period of the Faridabad plant when a special cell was created to convert all the universal machinery into single purpose machinery to make modifications on the machinery bought from the collaborator, and design and manufacture machinery for replacement purposes. The *Addas* used by the company have a usable life of about 3 to 5 years.

The manufacturing policies of the company are expressed in the following statements of the managing director:

> *We do not have any foundry or forgeshops --we buy all castings and forged items, though circumstances may force us to take up such activities also.*
>
> *We make half a dozen major components of the engine – crank case, cam shaft, connecting rod, cylinder head and cylinder liner.*
>
> *In all these critical components we buy the forgings or castings and machine them.*
>
> *In the transmission system we make very little – we mainly do the finishing operations. Some other critical components which we make ourselves are the steering worm and the shifter forks. A special purpose machine is required for the manufacture of the steering worm, which is made by ourselves.*
>
> *The shifter fork is a little complicated component, for which we were not able to develop reliable subcontractors.*

We buy all the gears and shafts from established manufacturers. We have about half a dozen sources.

We had a sheet metal and fabrication shop—where we were manufacturing the bonnet, front axle, and three point linkage and some other small components. We have now decided to discontinue the fabrication shop and are going to gradually subcontract these items. Facilities for fabrication and sheet metal work require very large space and also ample capacity is available outside.

At the same time we feel that we have come to a stage which is beyond the optimum limit of subcontracting which is one of the reasons for starting the gear and transmission plant at Parwanoo. Economics is not always the deciding factor. Securing safety in the supply of materials is necessary. Our basic machine shop has not changed since 1970-71—only last year we bought some equipment to replace some of the old.

Regarding the plant our thinking is that we will have some gear manufacturing capacity to fall back upon in times of crisis. The main activity would be manufacture of gears. We do not have any gear manufacturing capacity at present. At Parwanoo we are also going to have machining facilities for complicated transmission housings. Earlier we used to manufacture the housings. But later we got vendors to manufacture them, to whom we had advanced money for investing in machines, which we have recovered over a period of time.

Some observations made by him regarding choice of manufacturing technology are:

In India, and specially in the engineering industry, equipment selection is often done on the basis of non-economic factors. In other words a production manager would be very happy to tell his friends that he has the most sophisticated machinery. He takes pride in the sophistication of the manufacturing processes employed by him. Often this takes precedence over economic considerations....

Many a time, machinery selection is accepted without investigation. Truisms like "SPMs are more economical than GPMs at large volumes of production, are simply imported from the West without considering the differences between the situation there and the underdeveloped countries.

Research and Development

Developmental activities were undertaken from the very beginning of the company. A design cell had been created for undertaking the following activities:

1 Indigenization of all the tractor components.

2 Converting the simple *Addas* into single purpose machines by designing suitable jigs, fixtures and other special tooling.

3 Designing and manufacturing special purpose machines required for machining critical components.

Till about 1972-73 the whole organization was geared up to increase production. Prices being controlled by the Government the only other way of generating larger surpluses was through a larger volume. By 1970 the accumulated losses after providing depreciation amounted to Rs. 35.24 lakhs. However, by constantly increasing production, all the accumulated losses were wiped off by 1973-74.

During this period i.e. from 1959 to 1973-74 the financial position of the company had been very precarious and therefore no real efforts at R&D had been made.

Competition and Diversification

Also the tractor industry had been in a sellers' market till about 1972-73. According to the Managing Director, "marketing" as a concept had not taken roots in the company during this time. It could be described more as "distribution". Initially distribution of tractors also had been controlled by Government as the indigenous production was very small.

However, in 1972 the market started showing signs of a change. The Directors' Report in the Annual Report (1971-72) said:

> *There is now tough competition in the Tractor market. Further, overall demand for tractors has fallen because of various reasons, such as further reduction in size of landholdings.*

....On the recommendations of the Bureau, prices of all the indigenous tractors were revised in January/ February this year. The price for Eicher tractors was fixed at Rs. 25,200 .... The company had however kept the selling price at Rs. 23,700 ... in order to meet competition.

In order to give more incentive to the dealers and to enable them to improve their servicing facilities, the company raised the discount to its dealers from Rs. 800 to Rs. 1300 per tractor.

In 1973 the company added the following products to their product line:

1 Eicher Diesel Generating sets

2 Stationary Diesel Engines

3 Trailers 3-6 tons

No industrial licence was required for manufacturing and selling these new products.

The company's policy which guides new product decisions may be gauged from the following:

... the company has maintained its prime objective of economy with quality by providing sound low cost products. So much so that when the price control was lifted from the tractor industry in 1974, Eicher was the only organisation which did not raise its price, even marginally.

Yet another unit was set up in 1978. The product chosen was machine tools, which we felt could fill the gap existing in the market between the high cost/high precision machines made by large manufacturers and the low/cost precision machines manufactured by the small scale units...

The year 1973 also saw some exploratory steps in developing an export market for their products – mainly tractors. The company made efforts to develop markets in the developing countries of South America and Sudan. They also supplied samples of components for "Eicher" engines to their collaborators. The collaborators' report read as follows:

We are very glad to be able to say that this component just could not be better. All measurements are not only within tolerance but they are very close to the basic data.

In 1974-75 the financial position of the company was very bright, with a net profit of Rs. 38.6 lakhs (see Exhibit 1). The company started giving its attention to areas like diversifying its tractor line, improving the existing tractor by providing automatic depth control systems and making improvements in the following areas:

1 Improved bonnet

2 Rigid Axle with improved suspension

3 Improvement in electrical system

4 Improved quality for better look and greater durability.

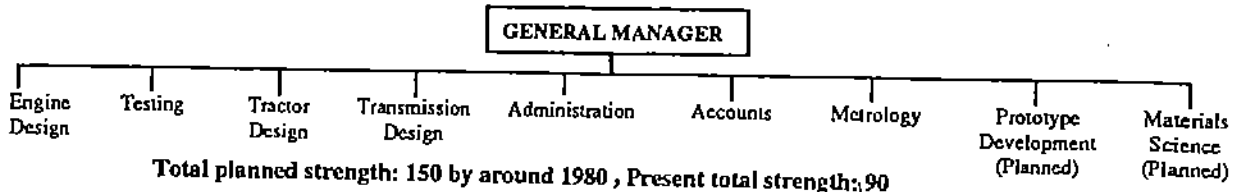
Till 1974-75 there were no separate facilities for developmental work and existing production facilities were used. In view of the enlarged activities envisaged for the R&D department the company approached the Indian Overseas Bank for loan facilities.

R&D Organization

In 1975-76 the company, for the first time, invested heavily in equipment and machinery for research and development. A beginning was made in the recruitment of personnel for manning the R&D department.

Dr. S. Satyamurthy, with 16 years experience in industrial research in Germany and $3^1/_2$ years experience in R&D management in TELCO joined the company as General Manager – Research and Development. The organization structure of R&D is shown on next page.

Research & Development



Total planned strength: 150 by around 1980 , Present total strength: 90

The department is staffed by highly qualified personnel. Two of the senior managers including the chief of R&D hold Ph.D. degrees in their fields of specialization. The company has a policy of recruiting generally M.Tech. degree holders with experience in research and development as section heads and either M.Tech. or B.Tech. as Senior Engineers or Engineers below the section heads.

R&D Objectives

The present objective of the R&D department is to make constant improvements in the products, develop the 35 h.p. tractor, make improvements in the existing model in response to feedback from the field and cost reduction by making design changes.

A value analysis cell is planned to be created at a later stage which would look into aspects of providing the customer the value in the product at the least cost. Some attention is given to these aspects at present, but the management feels that it is inadequate. A systematic effort in value analysis would be very useful in cost reduction.

R&D Capital Expenditure

Systematic budgeting in the company is a very recent phenomenon. An annual budget is prepared by R&D, but their management is thinking of introducing "project costing" in R&D, and thinking of considering R&D department as a profit centre.

The capital expenditure on R&D is given below:

Year	Amount in lakhs
1977-78	85.30
1976-77	10.84
1975-76	60.25
1974-75	0.58

Major Organizational Changes

The present managing director Mr. Vikram Lal (the son of the founder Mr. M.M. Lal) after completing his engineering education in Germany, joined Goodearth Engines Private Ltd. and worked there for two years. This company was promoted by the Goodearth Company the ownership firm which floated Eicher Tractors India Ltd. Goodearth Engines was a very small unit – only 15 persons were on its payroll. Small diesel engines were assembled in collaboration with another German firm. The manager of this company did not have a technical background. Mr. Vikram Lal therefore took up all the technical functions. In 1968, he went over to Eicher Tractors India Ltd. which was in a very precarious state. He did not have any official designation and it was left to him to define his own role. For the first few years he worked in the various technical functions like materials procurement, vendor development, design of jigs and fixtures and special purpose machinery, selection of plant and machinery, production planning and control and later was designated as the Technical Adviser in charge of all technical functions.

The changes that took place in the organization are best explained in the words of the managing director:

> *In 1975 we got some management consultants to take a look at our operations. It still was a small company, very few people had any idea of what was what. We did not have a single man whom we*

could describe as a good manager at that time. The company was running because of dedication and hardwork. By the end of 1974 we had reached a production volume of 100 tractors per month. We did not seem to be able to increase the volume beyond this figure. My feeling was that there was something wrong. There was no shortage of cash – we could invest in machinery if it was required – we could have higher inventories if required. When the consultants came, they said that there was no problem with the hardware – but the source of the problem was the "people". So in April 1975 we reorganised ourselves. Three General Managers were appointed in Finance, Works and Materials with three officers at the middle management level and some at the junior levels. It was a classic case. By September 1975 the production level increased from 150 tractors per month to 180 per month in December and then it went up to 250 tractors per month without any input in terms of machinery and equipment.

The Directors reported in the Annual Report for 1975-76:

It is with the induction of suitable persons at all levels that results of 1975-76 have been possible. Employees are being imparted training in appropriate areas both inside and outside the company....

To quote the managing director again:

Rapid increase in production has its obverse side. That is we had not paid attention to the quality aspects – mainly suppliers. They could not gear up to the quality standards required by us. This situation developed gradually and was therefore not readily noticed.

By September 1976 we found that it was not possible to go further in this condition. I suspended production for a week initially. But in fact the production had to be suspended for over a month. During this time we addressed ourselves to sorting out all quality problems – vendors, within the plant, deciding on critical tolerances, developing proper control systems and so on. Immediately afterwards it was difficult to reach the previous production level. We lost production for two or three months. Since then there has been a steady increase in production....

Changes were made in the marketing organization also. Figures 1 and 2 show the differences in the organizational structure before and after the change in 1976. In the earlier set up "sales" and "service" operated independently and were co-ordinated only at the level of the Director-Marketing. However, as the market became more and more competitive and more and more reports of field problems came pouring in, the management realized that customer oriented marketing department was essential for the organization's success.

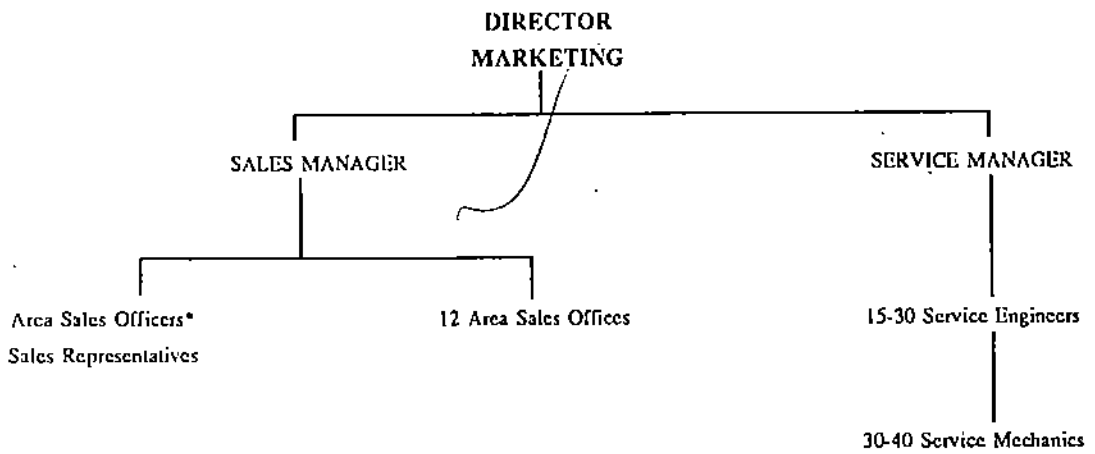


Figure 1

In 1976 the marketing set up underwent a radical change. In the structure the sales and service representative is given the responsibility for the sales as well as service in a particular territory. In addition to reporting to his immediate superior, the Area Officer reports functionally to the Service Manager. The dotted lines show the information flow and communication channels between sales and service. In this set up the attempt is to link sales and service at all levels.

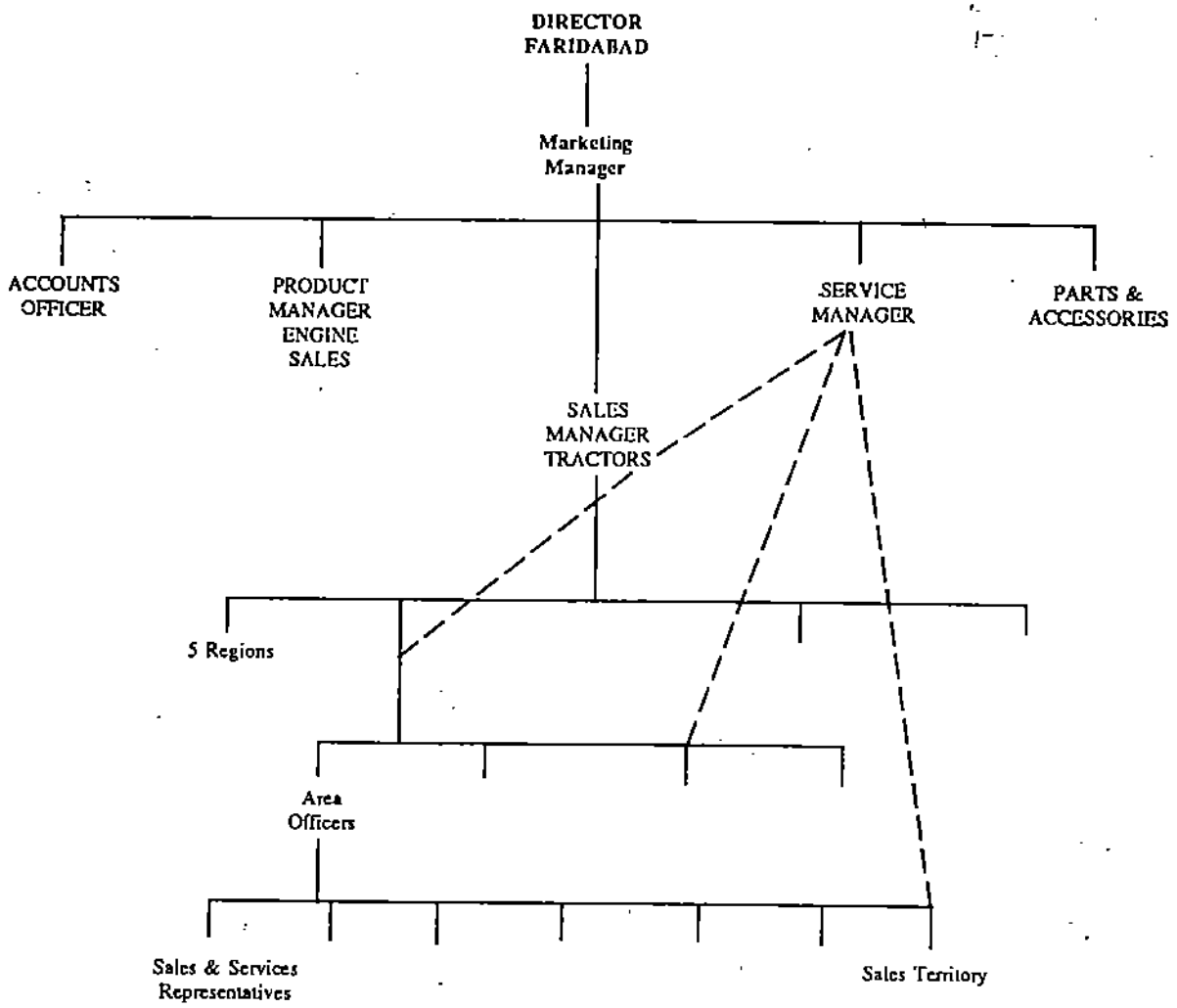


Figure 2

Systematic analysis of warranty claims has been introduced and co-ordination mechanisms to look into these areas have been developed. Weekly "Warranty Meeting" are held between representatives of production, materials, quality control and service departments to deal with routine warranty and quality issues.

For dealing with critical issues which might involve major investment to improve quality or major modification in design of product, there is a co-ordination mechanism at the levels of senior managers and Director – Faridabad, General Manager – Research and Development, and Director – Materials.

In view of the expanding operations the company decided to set up an Engine Plant at Alwar in Rajasthan. The registration is for manufacturing 7500 engines per year. The company decided to phase out the installation of capacity with 3000 in the first phase. In the words of the Managing Director:

> *Initially the Alwar Engine Plant was supposed to be a captive unit of the Faridabad tractor plant. It was that the main technical services would be centralised at Faridabad. One of the senior officers from the Faridabad plant was sent to Alwar as the Project Manager in 1976. But soon it was found that the Faridabad Works Manager could not co-ordinate activities in Alwar properly. Communication channels did not seem to be effective. So I learnt that authority had to be given to the people at Alwar.*
>
> *At this stage it was decided to divisionalize the company. We felt that with 2 plants – the same old functional structure would not be suitable.*

EXHIBIT 1
Eicher Tractors India Limited
Summarized Income Statements for Ten Years

Unit Rs. in thousands

Sl. No.	Particulars	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
1	Sales	4345	6586	8712	15496	19044	22017	29501	37617	81572	86182
2	Miscellaneous Income	13	27	90	65	79	292	205	276	170	84
3	Total Revenue (1+2)	4358	6613	8802	15561	19123	22309	29706	37893	81742	86266
4	Manufacturing and other expenses	4171	6530	8260	14160	17548	20154	25030	32575	72505	79484
5	Finance Charges	592	572	536	703	925	1133	879	1108	1166	1286
6	Depreciation	337	381	573	487	427	555	381	540	800	1122
7	Total expenses (4 to 6)	5100	7483	9369	15350	18900	21842	26290	34223	74471	81892
8	Net Profit (loss) before tax (3–7)	(742)	(870)	(567)	215	223	667	3416	1670	7271	4373

Source: Reconstructed from the Annual Reports. There might be some errors in reconstructing the statements as the format for classifying grouping and reporting varied from year to year.

EXHIBIT 1
Eicher Tractors India Limited
Summarized Balance Sheet for a Decade

Unit in Rs. lakhs

Particulars	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ASSETS											
Fixed Assets	7.75	16.21	20.82	26.58	23.81	23.01	21.88	23.20	26.90	105.60	154.96
Investments	0.01	0.02	0.03	0.01	0.01	0.01	0.02	0.03	0.04	0.04	0.04
Current Assets, Loans and Advances	43.35	65.90	43.59	53.21	86.79	122.53	107.94	153.01	189.51	228.15	297.23
Accumulated Losses*	14.92	24.06	31.68	35.24	32.67	28.37	21.84				
Total	66.03	106.19	96.12	115.04	143.28	173.92	151.68	176.24	216.45	333.79	452.23
LIABILITIES											
Share Capital	6.82	14.72	14.83	19.16	19.16	19.16	19.17	19.17	19.17	19.17	19.17
Reserves & Surplus	2.08	2.08	2.08	2.08	1.36	1.23	1.44	10.75	49.74	74.16	94.48
Loans	30.74	49.79	32.40	36.18	43.96	79.25	61.39	58.60	55.95	97.25	82.88
Current Liabilities and Provisions	26.39	39.60	46.81	57.62	78.80	74.27	69.68	87.72	91.59	143.21	255.70
Total	66.03	106.19	96.12	115.84	143.28	173.92	151.68	176.24	216.45	333.79	452.23

* Net an Asset; could have been shown as a reduction to equity – a negative reserves & surplus.

FRUITS AND VEGETABLES CANNING PROJECT OF THE GUJARAT AGRO INDUSTRIES CORPORATION LIMITED

1) Canning Industry in Gujarat

Gujarat occupies an important place in the production of fruits like mangoes, tomatoes, bananas and papaya. However, in fruits and vegetable preservation industry, the State could not make much progress. The lag in canning industry in Gujarat was due to the following reasons:

1) Unlike other States, Gujarat has only two main fruits, namely, mango and chikoo. The market has been developed only for mango.

2) Domestic consumption of canned products is negligible as, in India generally people have preference for fresh fruits.

3) The export market has been quite competitive.

4) The scope for small scale industry to venture successfully in a competitive product line of canned and bottled fruits and vegetables is limited due to the fact that they cannot go on a large scale production. Without large scale production, introduction of these products in the market becomes difficult as the publicity expenses will be quite substantial.

5) Canning industry is such where although the fixed capital investment is low, the requirement of working capital is very high.

Around 1970, about 20000 acres were under mango cultivation in Gujarat out of which about 15000 acres were in Bulsar district. The average annual yield per acre was about five tonnes. Bombay being near Bulsar offered facilities of ready market, sources of containers, and export facilities.

Although the three major mango producing areas in Bulsar district were Bulsar, Pardi and Gandevi talukas, almost 50 per cent of the produce of the district was channelised through co-operative marketing societies established in Gandevi, Navsari and Chikli talukas (all in Bulsar district). The other 50 per cent was handled by smaller co-operative societies and traders of vegetables/fruits. In Gandevi there were three leading co-operative marketing societies. And there was also a co-operative sugar mill. In Pardi there were two major canning factories: Vasundara and Universal canning fruits and vegetables.

2) Canning Factory of GAIC

In 1972 the Gujarat Agro Industries Corporation (GAIC) thought that linking raw materials directly with processing units could bring greater viability to the canning industry through savings in transportation costs.

In 1972 when GAIC was contemplating the location of the canning factory at Gandevi (near Bulsar), the three major co-operative marketing societies at Gandevi showed a willingness to financially participate in the project. GAIC also thought that such a participation would ensure a stable supply of mangoes for the factory. However, by the time the factory was commissioned at Gandevi in May 1975, this proposal did not materialise, possibly because:

a) the co-operative societies did not want to make any forward commitment for a product that depended upon seasonal conditions, and

b) they could find a ready market in fresh form for their produce.

The canning factory formed part of Gujarat Agro Foods Ltd., a subsidiary of GAIC. To start with, GAIC decided to handle under this project only mangoes and tomatoes. The tomato season in Bulsar was from beginning of January to end of March, and the mango season was from mid May to end of July.

The initial capacity of the Gandevi factory was designed for 350 tonnes of mango products like mango pulp and mango juice, and 125 tonnes of tomato ketchup per year (during the season).

This case was prepared by S. Vathsala, Fellow programme student in Business Policy, under the guidance of Prof. T.K. Moulik.

This case was prepared with the co-operation of the Gujarat Agro Industries Corporation Ltd., Ahmedabad. The help rendered by Mrs. M.R. Parikh, Managing Director and by Messers B.R. Shah and V.N. Mehrishi of the Corporation, is gratefully acknowledged.

3) Raw Material Sources

The Alphonso variety was considered best for all canning purposes. However, GAIC proposed to have Alphonso for pulp and slices in syrup, and the deshi and totapuri varieties for all other canning purposes like juice, nectar, etc. It was estimated that the requirement of mangoes for the season would be 380 tonnes (71.55 tonnes of Alphonso and 308.45 tonnes of deshi/totapuri varieties). This was less than 25 per cent of the total availability in the Gandevi market. Similarly it was estimated that total requirements of tomato per season would be 515 tonnes which was expected to be easily available in Gandevi, Navsari, and Chikli talukas.

The Gandevi Co-operative Sugar mill was considered an easy source for sugar supplies. Where export sales were involved, sugar could be obtained on Government of India's quota basis on controlled price. After finalizing the export deal the claim could be sent to the government for release of the quota. Usually the release was available between 15 days and one month prior to the start of production.

In India there were three major supplies of tin containers: Metal Box, Poysha and Zenith. Containers for the canning industry required high quality tinplates. In India only imported tinplates were used for manufacture of containers. The import was arranged by the Steel Authority of India Ltd. (SAIL). In the first year GAIC contracted with Metal Box Co. for its requirements.

4) Market for Canned Products

The domestic market especially household market for canned fruits and vegetables was stagnant for almost a decade. Keen competition from well established firms in the consumer market for canned products, required any new entrant to entrench itself well in the market to enter in a big way. (Appendix-I gives a description of the canned products industry.) GAIC thought that entering the local market with its limited number of products would be a formidable task, and therefore, decided for the time being, to concentrate on the export market. The export agency houses were contacted for initiating export sales. The export agencies charged five per cent on sales value as their commission. Initially, only two houses were contacted, and by 1976 more contracts were established in Bombay and Delhi.

5) GAIC's Performance in Canned Products

In 1975 only mango pulp and juice were processed. Exhibit 1 gives the break up of the sales figures.

Tomatoes: The first full year of operations (1976) was one of hurdles. In October 1975, Mr. Girish Patel, an executive in GAIC who prepared the feasibility report and was assisting the Project Manager in this project left GAIC to take up some other assignment. Mr. Yogesh another executive at GAIC was asked to take up additional charge of this project to assist the Project Manager. As the tomato season was to follow in January 1976, a hurried market survey was undertaken to estimate the demand for tomato ketchup in some of the major towns in Gujarat and in Bombay (Exhibit 2). It was considered that a five to ten per cent market share in Gujarat would be a worthwhile target. In spite of the demand in Bombay, the following factors restricted GAIC from venturing into Bombay market:

1) The attainable market share would be too small and the number of products too limited.
2) Dipy's the important competitor had their manufacturing unit in Bombay and had, therefore, local source for containers.

There was no tax burden on fresh fruits and vegetables, whereas on processed products from Gujarat, besides local sales tax there were customs, sales tax, and a seven per cent octroi.

However, GAIC contacted a local agent in Bombay who supplied to hotels and restaurants and through him could obtain a small order for ketchup in Bombay market. Compared to the brickred colour of the competitors' products, GAIC's product turned out to have an yellowish tinge and this rendered it difficult to get consumer acceptance, more because this was an edible item. The Government of India had from 1975 banned the use of artificial colouring. On enquiry it was found that the competitor used the Pusa Rubi variety of tomatoes from Bangalore which gave the product a natural brickred colour whereas the Bulsar variety could not.

Export possibilities of tomato ketchup were quite bleak. In tomato products the major producing countries were USA, Italy, Spain, France and Portugal with main markets in UK, East Germany and Switzerland. Further the demand was more for tomato paste a product not processed yet in India. This required tomatoes with a higher percentage of solids. Experiments were under way for such a crop production.

Mangoes: For exports, the sales commitments were to be made in advance, but no forward buying of mangoes was

possible. In 1976 to meet the export orders, it was planned to produce 10000 cases of mango juice and 5000 cases of pulp (See Exhibit 3). Due to crop failure in this season, production of mangoes was very poor and as a consequence prices shot up. Against the requirements of 300 tonnes of mangoes only 150 tonnes could be obtained locally. On enquiry with the other canning units, sources of availability could be located in Bangalore where the season extended up to August.

Containers: In this year the suppliers of containers could not meet the contract due to delay in getting tinplates. As production could not be delayed, makeshift arrangements were necessary, and the products were first packed in larger containers, and later repacked into smaller containers, thus necessitating to seek protection under force major clause for delayed deliveries. The impact of all these factors reflected in the financial performance (Exhibit 4).

6) Operations in 1977

Learning from these hurdles, planning in the real sense for the canning project started in 1977. As early as in November 1976, GAIC contracted with all the three suppliers for 1977 season.

As the 1976 experiences showed tomato ketchup a disadvantageous product, GAIC decided not to go in for this unless there were firm orders. They did get order from Railways, and decided to process 1500 cases. But this time the tomato crop in Bulsar was a failure with the result that they had to get ketchup from Karnataka Agro Industries Corporation to meet the commitment.

For 1977 the requirements of mangoes were estimated as 300 tonnes of deshi, totapuri for juice, and 200 tonnes of alphonso for pulp. After going to the market for purchase it was realised that again there was failure of crop. An urgent meeting with the marketing societies was arranged. But they were quite discouraging as they reported that the production was very less and the price too high. From the local market it was possible to procure only about 60 tonnes of deshi/ totapuri varieties and about 75 tonnes of alphonso. The remaining quantity had to be procured from Bangalore.

7) Vegetable Canning

With a view to utilize the capacity fully it became necessary to explore the possibilities of other products. It was gathered that Vasundara Canning Factory at Pardi was handling vegetable processing. On contacting the export agencies it was found that export market existed for all the varieties of vegetables grown in Gujarat. In 1977 it was possible to get a number of orders for export of processed vegetables. In fact, the orders secured exceeded the available capacity. In 1977 the capacity was increased to 650 tonnes (See Exhibit 5). It was proposed to further increase the capacity to 800 tonnes in 1978 (Exhibit 6). In 1977 target production could not be achieved as the boiler capacity was inadequate. The 350 kg. capacity boiler which was expected to process 1.5 tonnes per shift could process only 0.4 to 0.5 tonnes. Unlike mango where the pulp could be extracted first and the processing taken up later on, vegetables required immediate processing. In mango processing most of the operations were mechanised and automatic whereas in vegetables a number of manual operations are involved with the result that against 300 tonnes processing possible in mango, only 50 tonnes vegetable is possible at a stretch (Exhibits 5 and 6). For grading and sizing jobs only female labour was available who were reluctant to work in night shifts.

In spite of all these difficulties, the 1977 performance was quite encouraging. Within the first nine months, the export sales figures have gone up almost eight-fold of 1976 sales and for first time the project realized net positive margin (Exhibit 4).

8) Quality Control

Since the project was export oriented, quality was of utmost importance. The manager at the plant was a food-technologist and he was responsible for purchases and quality of the finished products. Buying was done from the local market and prices were determined by the prevailing day-to-day market prices. The prices were determined in comparison with those quoted by the Vegetable Marketing Society at Surat which was considered as the basis for fixing all prices. The Manager at the plant was in constant touch with this society at Surat.

The raw material was tested for quality and graded at the purchasing point. The factory had its laboratory where samples from every batch were tested. Sometimes the product was also sent to the Navsari Agricultural Institute for microbiology testing. A representative from the Food Processing Organisation (Government of India) was available for checking the quality, and products like pulp and juice were produced under continuous inspection.

9) Future Plans

The contribution from different products varied considerably and therefore the break-even volume was dependent upon

the product mix. The method of allocating the overheads to different products is given in Exhibit 7. The product mix itself was dependent upon the export orders that the firm was able to obtain. Through repeat orders from the purchases GAIC could establish closer contacts with the purchasers and in 1977 they could do 10 per cent direct selling. The GAIC executives were hopeful of gradually eliminating the export agency houses.

From the feedback from purchasers GAIC could gauge that the consumers for the mango and vegetable products in Europe and other Western countries were the Indian community, and that there was still a vast untapped demand potential at attractive prices in the other segments. To enter these segments, GAIC executives felt that much more publicity to project the quality image of Indian canned products was necessary.

Recently with the petro dollar investments in the development of Middle East countries, a heavy demand for fruit juices has developed. India was striving hard to export fruit juices in good quantities to these countries with the help of various incentives of the Government of India (Exhibit 8). The competition was from Japan, Taiwan and Phillipines who trade in synthetic juices in attractive, easily opening containers with well packaged cartons, at competitive prices, running no risk of crop failures.

Though encouraged by its spectacular progress in export trade during 1977, GAIC was concerned about 1) how to sustain this improvement and what measures could be taken to overcome all the inherent problems in the trade; and 2) what could be its role in improving the position of Gujarat in the map of canning industry.

Exhibit 1: Particulars of Products Processed/Sold in 1975 (May to December)

		Qty.	Value
Opening stock		—	—
Raw materials consumed			
	Mango	41,926 tonnes	50,664
	Sugar	2,405"	10,039
	Citric Acid	—	1,704
Production		Kgs.	Tins
	Mango Pulp	17665	20771
	Mango Juice	13094	81789
Sales			
	Mango Pulp	Kgs.	
	Local	302.60	2,650
	Export	10200.00	55,625
Mango Juice			
	Local	59.93	485
	Export	3162.00	40,000
Closing Stock			
	Mango Pulp	6831.45	52,241
	Juice	5635.16	43,755

Exhibit 2: Demand Estimated for Tomato Ketchup through Market Survey in Late 1975

Place	Per month	
	Cartons	Weight
Ahmedabad	500-600	10 to 20 tonnes
Baroda	300-400	6 to 8 tonnes
Surat	200	4 tonnes
Rajkot	100	2 tonnes
Bombay	30000 to 40000	600 to 800 tonnes

Exhibit 3: Mango products scheduled for 1976

Mango Pulp
500 cases (1 case = 24 Tins; 1 Tin = 850 gms.)
Mango Juice
10000 cases (1 case = 48 Tins; 1 Tins = 170 gms.)
Tomato Ketchup
1 Tin = 350 gms. 1 case = 48 tins.

Exhibit 4: Performance of the Canning Factory

		May to Dec. 1975 (7 months)	Jan. to Dec. 1976 (12 months)	Jan. to Sept. 1977 (9 months)
I.	**Controllable Expenses**			
	Cost of purchase	2,23,900	7,51,600	25,33,300
	Dir. wages	8,500	33,700	1,00,600
	Power and Fuel	7,700	17,600	17,400
	Repairs & Maintenance	2,100	15,500	16,300
	Int. on Lokg. Cap.	18,800	16,100	20,800
	Others	6,600	36,600	40,100
	Capg. Stock	-	7,500	6,69,400
		2,67,600	8,78,600	33,97,900
II.	**Non Controllable Expenses**			
	Salaries	23,500	49,600	42,600
	Int. on fixed Cap.	60,000	1,37,400	1,00,800
	Depreciation	27,600	27,600	20,700
	Insurance	5,900	10,000	8,100
	Others	700	10,100	27,700
		1,17,700	2,35,500	1,82,300
	Total I + II	3,85,300	11,14,100	35,80,200
III.	**Revenues**			
	Sales : Export	1,55,600	2,17,400	16,57,300
	Local	4,400	62,900	63,500
	Closing Stock		6,69,400	19,50,000
		1,60,000	9,49,700	36,70,900
	Margin	(–) 2,25,500	(–) 1,64,400 (+)	90,700

Exhibit 5: Capacity Pattern in 1977

Mango	400 tonnes
Vegetables	200 tonnes
Ketchup and others	50 tonnes

Exhibit 6: Production Planning for 1978

JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.
	TOMATO KETCHUP 20 T	10 T									
			PATRA 5 T					OKRA			
OKRA				KERALA			KERALA	10 T	20 T	10 T	PADDI
50 = T 10 T				15 T			11 T				20T
	PADDI							PARWAL			
								20	10T		
10 T	5 T	10 T		GUAR			BRINJAL (RAVAIYA)				LILVA
	TINDORA			10 T			10 T	10 T	10 T		5 T
	5 T	5 T	DRUMSTICK				KANTOLA			SURAN	
	SURAN		1 T	10 T			5 T	5 T		5 T	
	2 T	2 T									
	LILVA						SQUASHES SYRUP				
5 T	1 T	5 T									
	UNDHIA MIX VIGT.										
	1 T	1 T	SYRUPS MANGO PULP			PINEAPPLE PRODUCT			MANGO JAM/SQUASH		
			SQUASHS 50 T -		300 T		5 T				
			5 T								
				MANGO			PAPDI				
				PICKLES		MANGO	20 T				
				10 T		JUICE/NECTOR					
						100 T					
Total 65 T 34 T		33 T	25 T	95 T	300 T	100 T	51 T	45 T	40 T	15 T	25 T

Exhibit 7: Basis for Distribution of Overheads for Product mix

Total Capacity planned 650 tonnes

Break up of planned capacity

Mango products	400 tonnes
Vegetables	200 tonnes
Ketchup, syrup etc.	50 tonnes

Fixed cost spread over all products on the basis of Cartons per tonne which is as follows.

Mango Products

Pulp 1 tonne	=	50 Cartons
Juice 1 tonne	=	125 Cartons
Vegetables 1 tonne	=	50 Cartons
Others 1 tonne	=	50 Cartons

Mango

200 Tonne Pulp	= 200 × 50 Cartons	= 10000 Cartons
200 Tonnes Juice	= 200 × 125 Cartons	= 25000 Cartons

Vegetables

200 Tonnes	= 200 × 50 Cartons	= 10000 Cartons

Others

50 Tonnes	= 50 × 50 Cartons	= 2500 Cartons

On a pro-rata basis given below the total fixed cost of 2,37,500 is distributed

10000 × 7.50 Pulp	@ 7.50 per Carton	=	75000
25000 × 3 Juice	@ 3.00 per Carton	=	75000
10000 × 7 Vegt.	@ 7.00 per Carton	=	70000
2500 × 7 Other	@ 7.00 per Carton	=	17500
			237500

Exhibit 8: Concessions Offered by Government of India to Exporters of Processed Fruits and Vegetables

1) On the total export value the government gives 10 per cent import replenishment against which items like citric acid pectin etc. can be imported.

2) The customs and central excise duties, and drawback rules provide for refund of import and excise duties entering into products exported at a specified rate.

3) A rebate of 50 per cent is given on railway freight from specified stations to the ports of export.

Appendix I*

The Canned Products Industry Companies having supply arrangements with the growers — Some Examples

1) Kisan Products Ltd.

a) Kissan Products Ltd. in association with National Seeds Corporation (NSC) and growers encouraged cultivation of Pusa Ruby variety of tomatoes. This variety has good colour and is ideally suited for producing tomato ketchup. National Seeds Corporation has the foundation seeds and tomatoes are grown under the supervision of NSC, yields of 10 tonnes per acre are obtained.

b) Kissan would supply wooden crates to the growers (each wooden crate costs Rs. 2.50 and holds 18 kg. of tomatoes) for enabling the growers to pluck the fruit right away from the plants and place it in the wooden crates. This facilitates minimal handling of the fruit and the quality is preserved.

c) In January-February season, a price of Rs. 0.50 per kg. is paid to the growers while in March, April and middle of May, a price of Rs. 0.40 per kg. is paid. Efforts are also made to grow tomatoes in Kharif season and a price of Rs. 0.55 per kg. will be paid.

d) The grower also gets Rs. 40.00 per kg. of dry seeds supplied to the National Seeds Corporation. Usually, on the dry basis 0.5 per cent of seeds are obtained.

e) An efficient grower who obtains a yield of 10 tonnes per acre usually gets a net return of Rs. 3,000 to Rs. 3,500 per acre.

This working arrangement is found good by all the three parties. The grower gets a remunerative price and there is an assured outlet for his produce. Likewise National Seeds Corporation is able to raise seeds of Pusa Ruby variety of tomato. Kissan Products Ltd. are happy to get quality tomatoes for the manufacture of tomato ketchup at a predetermined price with an assured supply.

*Source : Indian Good Packer, Vol. XXXI, No. 1, Jan-Feb. 1977, pp.90-91.

2) Himachal Pradesh Marketing Corporation (HPMC)

HPMC is working very closely with the fruit growers in the State to avoid glut in markets and to obtain better returns for their produce. Fresh apples from the State are not only marketed outside the State but also exported to Gulf and other West Asian countries. Processing is undertaken and apple juice is also exported. Marketing advances are provided to growers. Similarly financial assistance is given to forwarding agents and co-operative societies for the supply of packing material. Other assistance to growers include construction of a warehouse at Kiraput mainly to help the fruit growers of Kulu and Mandi areas. HPMC has also plans to help the individual consumers in urban areas by providing chilled fresh apple juice with the help of dispensers, initially to be installed in Delhi.

3) Corn Products Co. (India) Pvt. Ltd.

This company has its own orange juice crushing plant at Nagpur. The juice is transported to Bombay in wooden barrels with preservatives already added at the crushing centre. Lemon juice is purchased by the company from an established juice crushing firm for the last 30 years and crushing of juice is undertaken under the supervision of the company's technical personnel. This is an example to show how it is possible to forge supply arrangements. Juice extraction is generally undertaken during the glut season of orange and limes, i.e., during the months of October-December.

B) MARKETING COSTS AND PRICE SPREADS

The study of marketing costs presupposes a detailed understanding of the marketing channels prevalent in any industry. As discussed in Chapter II, this industry, besides 30 to 35 large-scale established units, comprises a large number of cottage and small-scale units who market their products mostly in the vicinity of their location directly through retail outlets. The martins charged by retailers in respect of these products are normally higher than these for established brands manufactured by large scale units. Though cottage scale units are not required to pay central excise, central sales tax, octroi duty and other miscellaneous charges, their production costs remain at the level of large-scale units due to the absence of the economies of scale of operation. Since these units account for less than 25 per cent of the total production in the country, the study of marketing channels of organised sector units is more relevant. Further the cottage and small scale sector units determine prices in line with the prices of the established brands. Since the market prices for various products are fixed by the large-scale units, the study of the marketing channels of these units assume greater significance. Marketing channels used for the products of large scale units are indicated in the chart given on page 3.

It would be seen from the chart that there are various bulk buying organisations for the product of this industry making direct purchases from the manufacturers. Procurement systems of some of bulk purchase organisations are discussed in the following paragraphs.

Defence and Canteen Stores Purchases

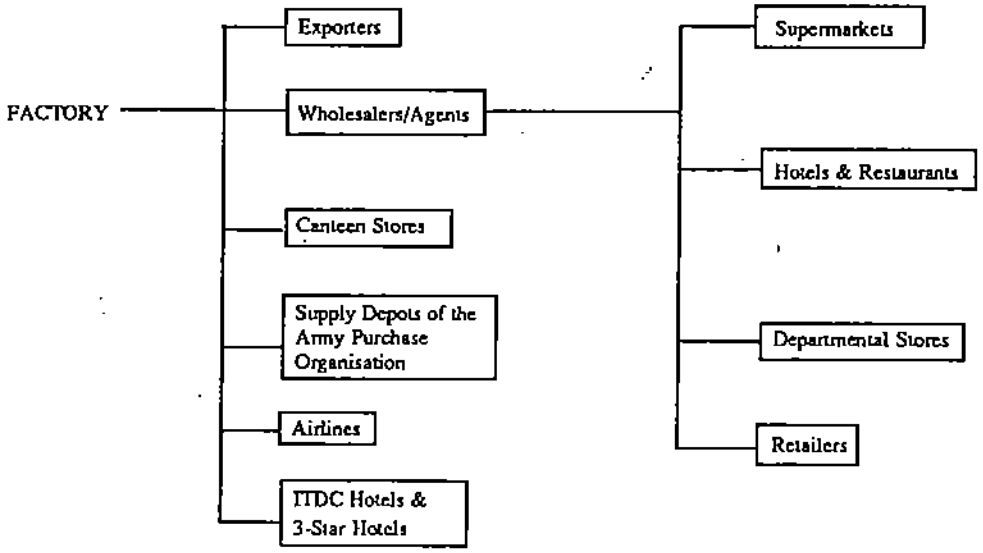
Army Purchase Organization under the Department of Food, Ministry of Agriculture and Irrigation, Government of India, New Delhi, makes purchases of processed fruit and vegetable products from the approved manufacturers through tenders. Major products bought by this organisation include canned vegetables and fruits in syrup. Most of the suppliers are large-scale manufacturers. Different items are purchased from different manufacturers because of the operational advantages available to manufacturers as well as to the Army Purchase Organisation. For Canteen Stores Department, the buying operations are made from Bombay by the Quarter Master General. For both these organisations, the supplies are taken from the approved factories directly. The quality specification and other terms and conditions for supplies to Army Purchase Organisation in respect of canned fruits and vegetables are detailed in Annexure 13.

Hotels and Restaurants' Supplies

Hotels and restaurants require specific types of products in definite pack sizes. Normally the hotel industry required larger/economy packs and the major products in demand comprise jams, juices, marmalades, tomato ketchup, pineapple slices in syrup and various canned vegetables.

The purchases by five star hotels and ITDC are again directly made from the manufacturers. From the industry's view point there are again only a limited number of manufacture processing products for the hotel industry. In fact many brands which are not otherwise known in the consumer market are being used by the Hotel and Restaurant industry.

Marketing Channels of a Large Scale Unit



Marketing costs and price spreads are most relevant to the household consumer market. Though bulk consumers and experts are important from various angles, the importance of household consumer from the fact that of the total production of about 55 thousand tonnes of fruit and vegetables products almost 50 per cent is meant for the household consumers. Cosmopolitan cities are the major centres of consumption. Since it has been difficult to study the price spreads for these products all over the country, the study has been confined to Bombay City which is a big consumption centre for the popular brands of representative products. The following table indicates the price spreads for different branded products in Bombay during September 1976.

Ex-Factory Costs and Ex-Factory Prices

It will be observed that ex-factory prices of orange squash especially that of Noga and Kissan are lower than their ex-factory costs. As prices of squash are determined by leader units like Dipy's and Kissan, other units fix their prices in like with the leader units in order to remain in the market. Ex-factory price of Rs. 57.00 f.o.r (when transportation and other costs are included) Bangalore for Kissan squash is higher than Rs. 60.00 of Dipy's in Bombay. In such a case Noga had to fix the price of its squash lower than that of Kissan and Dipy's at Rs. 59.00 for a case of 12 × 680 m. Similarly, in case of mixed fruit jam the ex-factory prices of Noga are lower than those of Dipy's by about 4 per cent.

Further it will be seen that though industry's margins (different between the ex-factory prices and costs) have been nominal, the retail consumer prices in Bombay for these products were higher by 43.8 to 68.4 per cent when compared with the ex-factory prices (excluding central excise and state sales tax). The difference between the retail prices and the ex-factory prices does not represent merely marketing costs, they include a number of central, state and local taxes inflating the ultimate consumer prices. For a clearer appreciation of the marketing costs included in these wide margins, the built-up of the consumer prices by various elements is indicated in Table 21.

It will be seen that the prices to the consumer are between 43.8 to 68.4 per cent higher than the ex-factory prices with price spread being wider in case of products coming from other states; for example in case of 'Kissan' products marketed in Bombay, the range of price spread varied from 57.5 to 68.4 per cent over the ex-factory prices whereas local products like 'Dipy's' and 'Noga' had a price spread varying between 43.8 to 52.9 per cent over the ex-factory prices. The prices to the consumer remain almost the same, but the manufacturer outside the cosmopolitan cities reduce their ex-factory prices to be competitive in these urban markets.

Margins of the wholesalers/agents varied from product to product and brand to brand. In case of fast moving products/brands the margins are lower as compared to low consumption items/less popular brands. The margins of the wholesalers/agents varied from 4.6 per cent to 9.75 per cent whereas those of the retailers are between 14.0 to 21.37 per cent, total trade margins worked out between 18.6 per cent and 28.07 per cent. Since the consumer prices have been between 44 and 69 per cent higher than the ex-factory prices, the share of taxes and duties in the marketing of these products worked out to 20.64 to 43.24 per cent.

Table 1: Price Spread for Various Products in Bombay during Sept. 1976

	Ex-factory cost	Ex-factory price	Retail Consumer price
Orange Squash (12 × 680 ml)			
Kissan	57.97	57.00	96.00
Dipy's	58.85	60.00	91.20
Noga	68.81	59.00	90.00
Mixed Fruit Jam (24 × 450 gm.)			
Kissan	89.89	93.50	154.80
Dipy's	100.87	106.00	153.60
Noga	101.08	102.00	156.00
Tomato Ketchup (24 × 360 gm.)			
Dipy's	68.87	77.60	111.60
Pineapple Slices in Syrup (24 × 850 gm)			
Kissan	140.16	160.00	252.00
Canned Peas (24 × 850 gm)			
Dipy's	100.14	116.69	158.40

Table 2: Incidence of Taxes and Duties to the Consumer of Various Products of Fruit and Vegetable Processing Industry in Bombay

	Indirect taxes paid in the cost of production	Excise Duty	Central Sales Tax	Octroi Duty	State Sales Tax	Total
Orange Squash						
Kissan	13.00	10.00	4.40	7.46	18.00	52.86
Dipy's	13.00	10.00	—	—	16.28	39.28
Noga	13.00	10.00	—	—	16.34	39.34
Mixed Fruit Jam						
Kissan	12.42	10.00	4.40	7.46	12.25	46.53
Dipy's	12.42	10.00	—	—	10.72	33.14
Noga	12.42	10.00	—	—	11.32	33.74
Tomato Ketchup						
Dipy's	10.00	10.00	—	—	10.69	30.64
Pineapple Slices						
Kissan	16.69	10.00	4.40	8.58	11.65	51.32

INDIAN IRON AND STEEL COMPANY

The management of the Indian Iron & Steel Co. (IISCO) in 1988-89 were actively planning the modernization of the production systems of the Burnpur Steel Works. The integrated steel plant was located in the iron and coal mining belt of Eastern India, and was one of the oldest steel making units in the country. The modernization had been initially proposed in 1966, by the then private sector management. However, its inability to mobilize the funds and technical expertise required for the purpose, had led to the takeover of management by the Central Government, in 1972. Seventeen years after the takeover, the modernization proposals were being pushed through the various layers of Government bureaucracy.

Mr. M.F. Mehta, Managing Director, IISCO, was contemplating the changes the proposed modernization would bring about. Apart from production the changes speared to cut across other functional areas as well—viz., finance, personnel, marketing and control systems.

Corporate Structure of IISCO — Historical Evolution

The Indian Iron & Steel Co. Ltd. was incorporated as a Public Limited Company under the Indian Companies Act, 1913. Registered on the 11th of March, 1918, and promoted by the Managing Agency, Burn and Company, it had an authorised share capital of rupees three crores. IISCO initially operated an iron making plant of 480,000 MT/Yr. capacity, at Hirapur village, near Asansol in West Bengal. Coal was purchased from the collieries run by the Bengal Iron and Steel Co. which operated an iron making unit at Kulti, nearby. The Gua iron ore mines was established in 1919, to feed the Hirapur Works. IISCO commenced iron production in October, 1922. (Note: Coal and Iron-ore are the primary raw material for iron making.)

Burn & Co. sold its share in IISCO, and its other managed companies, in 1924, to the managing agents, Martin & Company. This decision by Burn & Co., was apparently taken due to the financial problems created by the world-wide recession in the iron and steel trade. The new managing agents kept the name of Burn alive, by rechristening themselves, Martin Burn & Co. Ltd.

The government reported the scope for setting up a second steel works in the country, in 1934. (The first was the Tata Iron & Steel Co. Works at Jamshedpur, established in 1907.) Martin Burn & Co. decided to actively pursue this idea. Due to a Privy Council litigation in 1921, there was a profit sharing agreement between IISCO and Bengal Iron & Steel Co. To ensure viability in operations, IISCO absorbed the latter Company in December, 1936. IISCO now came to own two iron making units at Kulti and Hirapur, with an aggregate iron making capacity of 850,000 MT/Yr., and 100,000 MT of castings for pipes. The collieries were augmented by the purchase of the Chasnalla coal mines. There were now also two captive iron-ore mines at Gua and Chiria.

Martin Burn & Co, then incorporated the Steel Corporation of Bengal Ltd. (SCOB) on 20th April, 1937 to produce steel. The SCOB had share capital of Rs. 5.03 crores, and installed a 250,000 MT/Yr. steel making plant at Napuria, adjacent to the Hirapur Works. Steel production commenced in November 1939.

IISCO supplied the entire hot metal (iron) requirements of the Napuria Works. These inputs were provided at cost plus small profit margin, and in return, IISCO received 20% of the profits made by SCOB. IISCO also subscribed to 11000 shares (2% of share holding) of SCOB.

The Government of India, approached the World Bank in 1952 for financial assistance for making steel. The Technical Mission of the Bank recommended that "the cheapest and quickest way to increase iron and steel production in the country would be to merge IISCO with SCOB and then expand." Further expansion in capacity for SCOB/IISCO were then made conditional upon the merger of the two companies by the Central Government.

The Central Government later promulgated The Indian Iron & Steel Companies Ordinance in 1952, which provided for the amalgamation of SCOB with IISCO. The amalgated company was known by the name of IISCO, all assets/liabilities of SCOB being transferred to IISCO. The Hirapur Works making iron, thus merged with the Napuria Works making steel to form the Burnpur Works of IISCO. The Burnpur Steel Works thus became an integrated iron & steel plant, with captive raw material bases. This was the third such in the country after TISCO (1907) and Mysore Iron & Steel Works (1936). The managing agents continued to be Martin Burn & Co., with one Director on the Board, being nominated by the Central Government.

This case was prepared by V. Rangarajan and Sri Ananthanarayana Sarma, with the assistance of Dr. B.L. Maheshwari, of the Centre for Organisation Development, Hyderabad. It is designed to be used as a basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

The installed capacity of Burnpur Steel Works was expanded to 700,000 MT/Yr. of saleable steel in 1955 and 800,000 MT/Yr. of saleable steel in 1961 (i.e., 1,000,000 MT/Yr. ingot steel). The authorised share capital of IISCO was increased to Rs. 14 crores in 1956, and further to Rs. 16 crores in 1959. At this till, Kulti Foundry Complex had an installed capacity of 63000 MT/Yr. castings, and 166,000 MT/Yr. spun pipes.

IISCO and M/s. Stanton & Stevely Ltd. of the United Kingdom, jointly promoted the Stanton Pipe & Foundry Co. Ltd. to manufacture spun iron pipes and specials. The company was incorporated in July 1964, with share capital of Rs. 3.21 crores. The production unit was located at Ujjain in Madhya Pradesh, with installed capacity of 60,000 MT/Yr. pipes. Trial production commenced in August 1967.

Nationalization

IISCO drew up a Rs. 23.2 crore plan to develop Chasnalla Collieries in 1964. The authorised share capital was increased from Rs. 16 crores to Rs. 40 crores in 1967, presumably to fund this project. A proposal to increase steel making capacity by 300,000 MT/Yr. was accepted by the Central Government, in 1966. The proposal costed the scheme at Rs. 16 crores with a foreign exchange component of $16 Million. $9 Million was budgeted for essential spares and replacements. The World Bank agreed to fund the dollar part. The grant of import licenses was however delayed by the Central Government, by three years. As the import licenses had not materialised within the stipulated time, the World Bank cancelled its loan. By 1970, the cost of renovations had increased to Rs. 20 crores, and that of expansions to Rs. 27 crores.

In April 1970, the managing agency system was abolished, which left IISCO bereft of the support of Martin Burn & Company. Martin Burn then, was the third largest industrial group in the country, in terms of assets, after the Tatas and the Birlas.

In the late sixties, labour militancy became endemic in Eastern India, production declined and labour costs increased for IISCO. The Chasnalla project had a cost overrun of Rs. 17 crores. The rupee devaluation of 1967, put an additional burden of Rs. 8.4 crores on IISCO. The pricing of steel products was regulated by the Central Government, which did not see such reasons as basis for price increases. Thus by 1971-72, the amount of loan repayments stood at Rs. 35.04 crores. The Central Government refused to allow rescheduling of debts. The share of IISCO plunged below par in August 1971.

The Central Government decided to take over the management of IISCO "for a limited period of two years in the public interest to secure the proper management of the undertaking". An ordinance in July 1972 was passed for this purpose. The Union Minister of Steel, while piloting the takeover bill in Parliament, stated the major reasons for the takeover to be:

i) steady deterioration in plant condition
ii) serious industrial relations situation
iii) need for professionalising the management
iv) urgings made by a section of the Board.

The Indian Iron & Steel Company (Taking over of Management) Amendment Act, 1974, allowed for the undertaking of the Company to vest in the Central Government for a further period up to a maximum of ten years. In 1976, the Central Government held that the top management of the Company was guilty of mismanagement of the affairs of the Company, and restoration... of the management of the affairs of the company to such top management would be prejudicial to the interests of the Company and to public interest. Also, "investment of a large amount is necessary for the maintenance and development of the production of the undertakings of the Company"... for which... "acquisition by the Central Government of an effective control over the affairs of the Company is necessary to enable it to make the (aforesaid) investments". The Indian Iron & Steel Company (Acquisitions of Shares Act), 1976, was enacted to provide for the acquisition of all shares of IISCO held by the public. In December 1977, the authorised capital was raised from Rs. 40 crores to Rs. 100 crores.

The Public Sector Iron & Steel Companies (Restructuring) and Miscellaneous Provisions Act, 1978, provided for all public sector steel plants to come under the purview of the Steel Authority of India Limited (SAIL), which was termed as an integral company. All the shares of IISCO held by the Central Government, were now vested with SAIL. IISCO thus became a subsidiary of SAIL. However, it continued to retain its status as a separate company under the Indian Companies Act, and had its own Board of Directors. In November 1985 the authorised share capital was increased to Rs. 150 crores and further to Rs. 550 crores in September 1988, the subscribed share capital stood at Rs. 273 crores, which was all held by SAIL or its nominees.

The IISCO Stanton Pipe and Foundry Company continued to retain its identity as a separate company after nationalisation. The public sector British Steel Corporation of the United Kingdom acquired the Stanton &

Stavely Limited, and decided to divest of its shares in the Company. The shares were bought by IISCO in 1983-84. The IISCO Stanton & Pipe Foundry Company was now a fully owned subsidiary of IISCO.

Thus in 1989, IISCO, a subsidiary of SAIL, had the following units under its control:

1) Burnpur Steel Works, with installed capacity of 1 Million MT/Yr. of Ingot Steel.
2) Kulti Foundry Complex, with installed capacity of 63000 MT/Yr. castings and 166000 MT/Yr. C.I. Spun Pipes.
3) A fully owned subsidiary Stanton Pipes & Foundry Company, with installed capacity of 60000 MT/Yr. C.I. Spun pipes.
4) Collieries at Chasnalla, Jitpur and Ramangore & Coal Washery at Chasnalla.
5) Iron-ore mines at Gua and Chiria.

Exhibit No. 1 gives us chronology of the major events in IISCO.

Burnpur Steel Works — Description

The Burnpur Steel Works is the most important unit of IISCO. The fortunes of IISCO had always been tied to that of the Steel Works. More than three-fourths of IISCO's turnover is directly accounted for by the sale of steel, scrap, and by-products of the Burnpur Works — Rs. 413 crores on a turnover of Rs. 497 crores, in 1987-88. Similarly, a little more than half of all employees of IISCO are employed inside the Burnpur Works — around 17,000 out of a total of 35,700. The plant is located about 200 kms. from Calcutta and is about 10 kms. off Asansol Railway station on the main Howrah-Delhi railway line.

The main physical entry to the plant is through a tunnel gate. Immediately emerging from the tunnel, a visitor cannot fail to be overwhelmed by the panoramic setting of the Works. A treelined avenue, flanked on either side by the still waters of the cooling pond; in the background stands giant cooling towers, alongside the various Works units.

(Pages No. 26-28 detail the production process and the machinery at the Works)

The Burnpur Works has spawned the Burnpur township — which houses mainly plant employees. The township contains around 900 executive houses and 6,500 non-executive quarters. The township department of the Works maintains five playgrounds, a market, and runs a bus service for the school children. Beyond the township lies the Nehru Park and the aerodrome. There, the aviation department has aviation overhaul shops, which are approved by the Director General of Civil Aviation (the only one to get the approval amongst all the aviation shops of the SAIL steel plants). The township also has a 480 bed hospital, staffed and run by the works.

The highlight of the township is an area named 'the ridge'. The Ridge contains colonial mansions, which houses top executives. Amidst these houses, nestles the luxurious Burnpur guest-house — which is described as the best of the guest-houses maintained by the steel plants of SAIL. Alongside the guest-house, is the Managing Director's office — which was previously the Director's bungalow. In colonial times, (when the plant was run by Europeans), as the saying goes, only white skinned people were allowed to walk along the Ridge roads'.

Organizational Analysis

For the analysis of the organization, the 7-S model, developed by McKinsey & Co, has been used. The model assumes that executives have only a limited number of 'levers' to influence complex large organizations. The model explores the seven major ones: superordinate goals, strategy, structure systems, skills, style and staff.

Though there could be more variables than seven, these are presumed to be of crucial importance. The model is to help the executives develop a more effective way of perceiving and cutting through the complexity of organizations. The framework is illustrated on page 13.

The central point of the model is that the FIT among the seven variables has to be good to get long-term leverage. Addressing oneself to one or two of the S's is generally not sufficient. Even if the manager is aware of the need to work at adjusting the fit of the rest of the S's after a significant change in one or two (say, strategy and structure), it is certain to take effort and time to achieve integration.

Among the 7S's strategy, structure and systems are perceived to be the hardware and the rest—skills, style, staff and superordinate goals to be software..

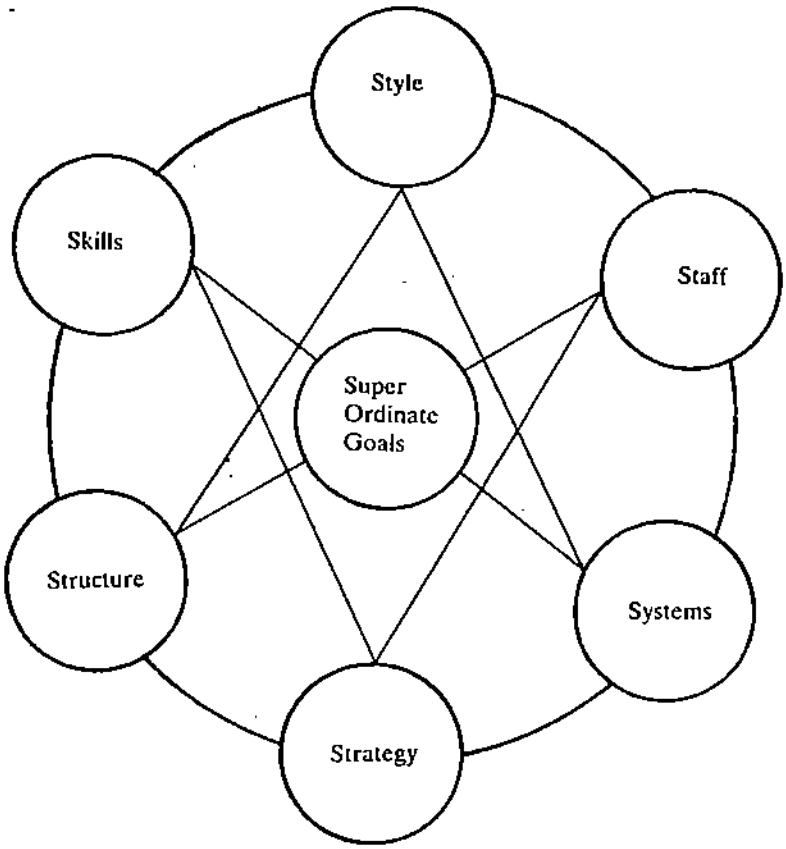


Table I The 7-S Framework

The superordinate goals is the lever which integrates the functioning of the other 'S's. Hence the presentation of the information relating to the organization begins with superordinate goals.

Superordinate Goals

Superordinate goals are shared values and aspirations that go beyond quantified objective, such as profit, ROI, etc. While these might include simple goal statements, the values must be shared by most people in an organization.

Before the nationalization, the plant had a "Europeanized" sense of values, with the top management being Europeans. Sons of employees were given preference in employment. This led to three generation linkages from individual families, with the Works, enhancing the feeling of belongingness. Stability at the top level, led to a team spirit and discipline which contributed to high productivity (consistent achievement of capacity utilization). Therefore, IISCO had a good corporate reputation. It was the only Indian company quoted on the London Stock Exchange. It paid 17% dividends in the 60s. However, these shared values were perhaps built on a "fear of authority" and the assumptions of racial superiority. The labour militancy in East India in 1967, overturned these values — anarchic acts of sabotage and personal humiliation, which made top executives quit, resulted in a sharp deterioration in performance.

Subsequently, the nationalization brought in a new 'public sector' culture. Senior executives of the Works, who witnessed the transition, explained that with this public sector culture, there was an increase in the number of levels, authority was no longer feared, poor work rarely got punished, rules and procedures were given more importance than getting work done, and staff functions like personnel, finance and materials grew in size. Staff functionaries acquired greater power on the 'Control' function.

The high turnover of the top executives (see Exhibit-II) appears to have contributed to dilution of autonomy and uncertainty in decision-making. The emphasis had shifted to 'doing things right' from 'doing the right things'.

The Works has been continuously making losses after nationalization with low capacity utilization and improper maintenance.

SAIL (the public sector parent organization) has initiated the modernization strategy to reverse this trend. SAIL itself had experienced financial problems until 1985. The new Chairman, Mr. V. Krishnamurthy, introduced a new work culture in all SAIL units, which emphasized better customer service, achieving rated capacity and reducing energy costs. Overtime payments were stopped from 1987. The SAIL plants have reported continuous increase in production (15% from '88-'89) and SAIL expects to wipe out its cumulative losses of Rs. 300 crores this year. The Chairman has also initiated a Rs. 15,000 crore modernization programme, to be funded by internal accruals and non-govt. borrowings which seeks to double steel production and labour productivity. One part of this programme is to spend Rs. 3,000 crores to modernize the Burnpur Works, and increase its rated capacity from One Million MT/Year to 2.15 Million MT/Year.

The SAIL Corporate Planning Director had, in a press interview, expressed the hope that after modernization "Burnpur could become the model plant for SAIL".

Strategy

Strategy is defined as a distinctive product-market-technology choice made by an organization and the mode of its implementation. This 'set of actions' made be aimed at giving a sustainable advantage over competition (say, providing better service to consumers) or allocating resources.

The initial decision of IISCO to get into steel production was due to the strategic compulsion of finding markets for the iron produced by it. The company (IISCO) had considerable iron production capacity and stable operation could only be achieved by means of an increase in the off-take of iron within India. In the absence of a large demand to absorb the entire iron output, its conversion to steel and rolled products was considered as the most logical and the only option. With these considerations in view the Steel Corporation of Bengal Limited was incorporated on 20th April, 1937, with Burn & Co. as the managing agents.

The depression of the thirties produced a cartel arrangement between the major producers i.e., TISCO, IISCO and Mysore Iron Works, to fix prices, regulate output and allocate markets. During the War years (1935-45) the Government exercised informal price control on steel products for war requirement. From July'44, the controls were widened to cover civilian requirements and prices were fixed by the Government. However, the Government ensured that opportunities were provided for maximising production and profits. The price controls were withdrawn after the war — the steel capacity of the works was increased to 350,000 MT/Year (ingot steel) in 1946 to meet the post-war boom in the market.

The Technical Mission of the World Bank which visited the country in 1952, at the invitation of the Government, estimated the gap between supply and demand in the country to be around two million tonnes of steel and 400,000 tonnes of foundry iron. One of the strategies suggested by the World Bank team to meet this gap was to expand the existing units.

As mentioned earlier, the Government then ordered, the merger of the steel making unit of SCOB with the iron-making unit of IISCO forming the present Burnpur Works and expansion of production capacity of steel. The 1953 expansion increased the capacity of the plant to 700,000 MT of saleable steel and 400,000 MT of foundry iron. The 1955 expansion further increased production capacity to 800,000 MT of saleable steel (1 Million MT of ingot steel) and 260,000 MT of foundry iron.

In the early 60s steel production in Burnpur Works touched 90% of the rated capacity. Full capacity utilization was reached in 1963-64. This compared favourable with the then prevailing norms in the steel industry, when 60% capacity utilization was accepted as optimum achievement in the initial year of operation. The period from 1960 to 1967, also saw IISCO consistently outperform TISCO (its major steel making competitor) in the share market.

As mentioned earlier, a combination of political, financial and labour problems led to the takeover of company management by the Government in 1972 and the subsequent nationalization. The capacity utilization in that year (1972-73) was only 43%.

One of the reasons for nationalization, given by the Government, was to ensure the renovation and modernization of the Works. The low capacity utilization, was due in part to the fact that foreign exchange required for urgently needed spare parts had not been sanctioned.

However, the Government/SAIL continued to neglect this aspect of ensuring proper maintenance of the plant, after the takeover. The Burnpur Works has, since the takeover, never crossed 70% rated capacity utilization, and has consistently reported losses.

Modernization of the plant had been the major strategic concern since 1966. The first attempt made by Sir Biren Mukherjee (then Chairman of the Private Sector IISCO) to get a World Bank loan to fund a modernization programme did not receive support of the Government.

After the takeover, the Government carried out a plant rehabilitation scheme as a temporary solution to the modernization problem. M/s M.N. Dastur was appointed in 1977 to carry out a feasibility report. They estimated the modernization cost to be around Rs. 300 crores, with a new sinter plant, shifting from open hearth furnaces to basic oxygen furnaces and using L.D. convertors instead of Bessemer convertors. This report was however not followed up.

When the Prime Minister, Mrs. Indira Gandhi visited the Soviet Union in 1981, she accepted a Soviet offer of a feasibility study for modernization of Burnpur Works. The Soviet modernization report, submitted in 1983, estimated that Rs. 933 crores would be required to maintain the plant at one million MT capacity. The second phase was to increase the capacity to 1.6 million MT/Year and the third phase to 3 million MT/Year.

Shortly afterwards, both the Managing Director of IISCO and the Steel Secretary of the Government of India, changed, and the proposal was dropped.

The latest attempt at modernization was initiated when the Prime Minister, Rajiv Gandhi visited Japan in 1985. At his request, a Japanese consortium of five major Japanese steel producers came to India and submitted the feasibility report in 1987, through the Japanese International Corporation Agency (JICA).

The Government/SAIL accepted in principle to plan ahead for modernization on the basis of this feasibility report. The final cost proposal is expected to be submitted for approval to the Public Investment Bureau (P.I.B.) of the Government in late 1989.

The major highlights of the JICA report are:

i) scrapping of old and building of new blast furnaces and the steel melting shop;
ii) building of sintering and continuous casting facilities and one new Coke Oven Battery with simultaneous phasing out of another Coke Oven Battery.
iii) revamping of some of the existing rolling mills and adding two new bar mills.

The total cost is estimated at Rs. 3000 crores, of which Rs. 1000 crores is in foreign exchange, (to be met through loans from Japan at concessional rates of interest).

The modernization strategy has become crucial to ensuring the existence of the plant. At present, the Works is operating on vintage technology. A blast furnace installed in 1920 is still in operation. Steel making processes like the Duplex with Bessemer convertors and open hearth furnaces have been phased out by other steel plants in the world a long time ago. Lack of pre-treatment facilities has seen high raw material consumption.

All this has led to financial unviability — The Burnpur Works has continuously reported losses after nationalization. A comparison of the cost of saleable steel production figures for SAIL and for the Burnpur Works is presented below for illustration.

Table II Cost of Production at SAIL & IISCO (Saleable Steel) (1987-88)

(Source: Figures of annual cost have been quoted from the Annual Report of SAIL for the year 1987-88, as reported in the Economic Times, Bombay — May 10, 1989, page five; and the Annual Cost Sheet of IISCO, Bumpur Works for 1987-88.)

ITEM	SAIL		IISCO, BURNPUR	
	Total Cost (Rs. Crores)	Cost/M.T (Rs.)	Total Cost (Rs. Crores)	Cost/M.T (Rs.)
1) Raw materials	1704	2315	196	3612
2) Stores & Spares	788	1071	23	420
3) Salaries & Benefits	715	971	68	1251
4) Power & Fuel	468	636	43	789
5) Freight/Repairs & Maintenance and Misc. Expenses (net of adjustment)	370	503	38	696
	4045	5496	368	6768

Note: Production of saleable steel (including pig iron) in 1987-88 was 7.34 million MT as per Annual Report for SAIL and 0.54 million MT of Saleable Steel for IISCO.

There are four strategic options open for the Burnpur Works at this stage:

1) Shut down the plant.
2) Only renovate the existing units — without adding new equipment.
3) Totaly modernize — Build a new (greenfield) modern plant and scrap all old facilities.
4) Choose a hybrid route of partial modernization (bringing in new equipment) and partial renovation of old facilities.

As a senior executive pointed out:
The first option of closing down the plant would mean that the 35,000 odd workers and families who directly or indirectly depend on the Works for their livelihood would be unemployed — This would create serious social problems in the township of Burnpur. The Left Front Government of West Bengal would exert a lot of political pressure on IISCO/SAIL against this decision. Also, the Works is strategically located in the coal/iron-ore mining belt and has in the past been one of the best run plants in the world. Given SAIL's inherent strength in steel technology, this alternative has not been chosen.

The second option of only renovating existing units would mean that the Works is stuck with the existing old technology. The blast furnace and steel melting shop equipment is obsolete. The increases in coal and oil prices and in wages, has made steel-making a loss-making proposition with existing technology. The Government/SAIL may not be prepared to continue underwrite losses of the Works. Hence the unviability of this option.

The third option of building a new plant (of a comparable 2.15 Million MT capacity) would cost Rs. 6000 crores — as against the cost of Rs. 3000 crores of updating the existing plant. Two coke ovens have been rebuilt already, and are practically new. It makes no sense to throw away such equipment. Also many of the infrastructural facilities and some of the mills can be run profitably. Thus, this alternative has not been pursued.

Therefore, the fourth option of scrapping and rebuilding obsolete equipment and using some of the existing facilities has been chosen, which forms the basic strategy of the modernization proposal submitted by JICA.

Modernization Programme — Salient Features
Marketing: The JICA feasibility report based the modernization proposal on the SAIL forecast of the steel market in India up to 2000 A.D. The demand for Bar Mill products is expected to exceed supply in India by 870,000 MT in 1989-90 and increase to 3.63 Million MT in the year 2000. Hence bar mill products were chosen for capacity expansion and two new bar ad section mills (with a capacity of 1.3 Million MT/Year) are proposed.

The other option of producing hot coils was discarded due to uncertain market and heavy capital investment.

Provision for erection of facilities for producing high value added items like low alloy steel grades is being kept for future additions.

SAIL decided that Burnpur Works would continue to produce only long (non-flat) products — Hence the modernization package does not envisage new facilities for producing flat products. (Note : Saleable steel is usually classified as long or flat products.)

The steel products after modernization are expected to be internationally competitive in price and quality.

Production Facilities
Some of the units like coal yards, coal handling plants, two coke ovens (Nos. 8 & 9) and part of rolling mills are to be retained under the proposal.

The following units are to be scrapped:

a) Two coke ovens (Nos. 7 & 10),
b) The four blast furnaces,
c) The steel melting shop (which uses the Duplex process)
d) light structural mill and
e) sheet mills

The following units are to be introduced into the works:

a) One 92 oven, coke oven battery (No. 11)
b) Two sintering machines,
c) Two blast furnaces,
d) Three basic oxygen converters with Oxygen Plant,

e) Four continuous casting machines — one Bloom Caster and three Billet Casters,
f) Two new Bar mills, and
g) New captive Power Generation facilities.
(See Exhibit – III for further details).

Raw Material: The JICA proposal does not cover the coal and iron-ore mines, Modernization schemes are being currently taken up to ensure that raw material of specified quality and quantity are available after modernization.

The Coal Washery at Chasnalla is being modernized and the Chasnalla deep mines reopened for mining in 1992 — this was stopped after a mining disaster in 1975 which claimed 375 lives.

The iron-ore mines are expected to produce adequate iron lump & fines that will be required for the Burnpur Works after their modernization. A new coal yard is to be constructed and raw material preparation facilities are to be installed.

Finance: The total cost of modernization was estimated at Rs. 3000 crores. This cost has now increased to Rs. 3800 crores due to yen appreciation and duty increases from 55% to 80% (duties amount for 20% of the cost). The foreign exchange part is to be funded by a 20 year loan, with a ten year moratorium and 5% rate of interest from Japan. The rupee amount is to be funded by SAIL, through its internal accruals, loans from the Steel Development Fund (carrying 8% interest) and selling of bonds.

One of the preconditions that has to be met for ensuring viability of the modernization programme is that accumulated losses (about Rs. 470 crores as on 31.3.89) and expected losses till production commences after modernization (1995) are to be absorbed by the Government/SAIL.

Time: The start-up date for the modernization programme is 21st July, 1988. The project is expected to be completed in 7 years and 9 months. By late 1989, the final approval for the programme is expected from the Government. The modernization will be carried out on a turnkey basis by the Japanese. The levelling work at the new site is already in progress. (See Exhibit- IV for Schedule of modernization.)

The modernization is expected to be completed in two phases. In Step-1, one million MT/Yr. capacity will be reinstalled, (1993) and in Step-2, full capacity of 2.15 million MT/Yr. crude steel will be installed, (1995).

The existing production processes are to continue operation — A phasing out programme has been drawn up to synchronize the phasing out of old units and introduction of new ones. (See Exhibit-V).

The Major Advantages of Modernization

1) In the by-product facilities, after modernization; (i) Coke oven gas will be doubled. (ii) Coal Tar will increase from 25,000 tonnes to 70,000 tonnes, (iii) Crude Benzol will increase from 3200 cubic metres to 12,000 cubic metres (iv) Ammonium Sulphate from 2300 tonnes per year to 4200 T/Yr.

2) In the main iron and steel works, (i) Man-power will be reduced from the existing 21,671 to 14,134 employees. (ii) The production will be four times more than the present production. (iii) Energy usage be reduced from 16 calories to 7 calories per tonne of steel, which will bring down the energy cost. (iv) Cost of manufacturing will be reduced to half and (v) The plant is expected to operate at 100% of its rated capacity. The following table reproduces the major features.

Table III Major Features of Modernization

	New Plant	*Existing Plant*
Rated capacity/Annum	2.15 Million tonnes Crude Steel	1 Million tonne Ingot Steel
Power requirement	116 MW.	30 MW.
Production of Hot Metal	Rs. 1593 per tonne.	Rs. 2571 per tonne
Consumption of Coke per tonne of hot metal	589 kg.	1000 kg.
Slag generation per tonne of hot metal	460 kg.	700 kg.
Productivity of blast furnace per cubic metre	1.41 tonne/M³/day	0.78 tonnes/M³/day
Cost of Ingot Steel Production	Rs. 2645 per tonne	Rs. 4832 per tonne
Production Process	130 tonnes in 50 minutes with BOF technology	250 tonnes in 10 hours with open Hearth Furnace
Cost of Production of Saleable Steel	Rs. 3117 per tonne	Rs. 6768 per tonne

The new technology calls for new skills. Instead of the present 'Duplex process' the 'Basic Oxygen Furnace' technology will be used for steel-making. The coke rate which shows blast furnace efficiency is 749 kg. per tonne for SAIL. In Japan and South Korea it is around 450 kg. per tonne. In IISCO after modernization it will be at 589 kg. per tonne. The total revamping of technology will see a quantum jump in skills.

Structure

Structure is formally represented by organization charts. It includes reporting relationships, and details how tasks are both divided up and integrated.

Organization structure in the 'good old days' as reported in the 'History of IISCO' — "in the twenties, at the Hirapur Works, (producing iron) . . . The works were divided into 13 main departments, each with a departmental manager responsible to the General Manager. Eight were convenanted Europeans, while five were Indians, who managed the 13 departments. Each department had a foreman incharge and below him were several rungs of labour. Selection of the European staff was by the agent in England, while the General Manager at Burnpur engaged the Indian staff. While no organized training department appears to have existed in the early days, on-the-job training was imparted by European staff and resulted in the development of a very efficient subordinate supervisory staff. Promotion was strictly accorded on merit. Relations between the rank and the file were good. Foremen usually dealt with all labour problems at the shop floor level, though labour could approach the managers, but seldom did. There was no Works Committee. It has been stated that no employee organization existed to the knowledge of the employer and that there had never been any strike or any dispute." (Page No. 49)

The General Manager of the Works, in turn, reported to the Chairman-IISCO, who was elected along with other Board members by the shareholders. The day-to-day control of operations at the Works thus vested with the General Manager.

The takeover of 1972, brought the unit under Government control. The staff departments grew in size — the finance department gaining a lot on control functions of other departments. The Government appointed Custodian Chairman, to preside over the Board of Directors of IISCO, and continued to leave operational control of the Works to the General Manager (Works).

When IISCO became a subsidiary of SAIL in 1978, the Chairman of SAIL became the Chairman of the Board of Directors of IISCO. A new designation, Managing Director, was created. This position was vested with operational control on all units of IISCO. The M.D.'s office was located near the Burnpur Works — effectively making the Managing Director, the operational head of the Steel Works. The Kulti and Ujjain unit General Managers also reported to the Managing Director, instead of the Chairman. The corporate identity of the Ujjain unit (IISCO-Stanton pipe company) was however maintained, and the Managing Director-IISCO was made the Chairman of the company. The General Manager (Works) of the Burnpur unit reported to the Managing Director — which saw a dilution of the responsibilities associated with this post.

Exhibit-VI gives the present organizational chart of IISCO. As can be seen from the chart, all the departmental heads report directly to the MD — The Kulti & Ujjain units and the mines/collieries, are also treated as departments for operational purposes. The span of control at the Managing Director level is 16. The top organization chart looks flat.

The overall control over the functional area is with the functional heads. There are ten levels in the executive cadre and the hierarchy looks pyramidal. The structure is functional, which has led to specialization of skills and has not developed people in general management areas.

From 1987 the project department has been headed by an Executive Director. Before 1972, it is headed by a project engineer, and then by a General Manager up to 1987. The change had taken place due to modernization.

After the Government, takeover lack of stability is noticed at Managing Director level and at the level of GM (Works), Burnpur.

Before 1972 Sir Biren Mukherjee was the Chairman for almost four decades. Between 1972-83, (in a decade) 7 MDs had changed in IISCO. The lack of stability and short tenure of MDs had delayed the modernization process. The earlier attempts to modernize the plant did not come through, because of the lack of stability at the top level.

The present MD, Mr. M.F. Mehta is the first person to have a tenure long enough (from 1983) to carry out modernization.

At GM (Works) Burnpur level, Mr. J. McCraken was there for 20 years from 1951 to 71. After 1972, as many as

11 GMs have occupied the same position in less than 20 years with the longest tenure being three years. The short tenure of top executives led them to achieve short-term results, neglecting the plant in the long run.

Exhibit-II lists the Chief Executives of IISCO & Burnpur Works since its inception.

The present organization structure can be described to be a 'functional' one. Some of the advantages of this structure are:

1) allows specialization
2) allows economies of scale
3) minimizes duplication of personnel/equipment
4) employees are allowed to speak the same language as their peers which makes for comfortable & satisfied employees.

Some of the disadvantages associated with this structure are:

i) Sub-unit conflicts (finance/materials/production for instance) which leads to goal displacement.
ii) Dilution of accountability as no one unit is accountable for end result.
iii) Difficulty in coordinating within units.
iv) Inability to cope with large size
v) Fails to develop general management skills.

The alternative methods of viewing the restructuring of IISCO are as under:

1) Restructuring can bring about changes by divisionalisation. Today the support functions are centralised. As part of restructuring, each zone, e.g. Coke Oven, Blast Furnace, Steel Melting shop and Mills, could be made relatively, autonomous. This can be done by providing them with full functional support in the areas of personnel, technology, quality, commercial safety, finance, material and maintenance.

   In British Steel, this system is called the 'Ship System' where each zone is provided with all the resources and then held responsible for performance. This improves accountability and gives role clarity. Each zone can be considered as a separate profit centre.

2) The other alternative is that if IISCO is merged with SAIL, the Burnpur Works becoming one of the units of SAIL. The Collieries and mines may be taken over by the Raw Material Directorate which is taking shape at the corporate level (at SAIL). Kulti and Ujjain can be merged together and made a separate unit. The marketing department can be integrate with the Central Marketing Organization of SAIL. This will lead to lot of new positions being created, and existing ones being abolished. The power equilibrium will change.

Major structural changes can thus be seen to be a part of the modernization programme.

Systems

Systems relate to organizational mechanisms that enable organizations to get things done from day-to-day. They include manufacturing processes, information systems, and other managerial support mechanisms like budgeting systems, performance appraisal, etc.

Finance: The major preoccupation of the pre-nationalization days was the management of the financial systems. IISCO as a public limited company had to supply detailed financial statements (Balance Sheet & Profit & Loss Account) to the Registrar of Companies and to its shareholders. The financial systems hence evolved to perform these functions. With IISCO continuing to maintain its corporate identity after nationalization, the financial systems, have not changed in design. New financial control system for ensuring compliance with public sector norms/regulations of decision-making have, however, been added. (Strengthening of audit systems/stricter verification of stock consumption/accounting/tighter tendering rules for purchase decisions.) A daily profitability statement for each shop has also been introduced. (See Exhibit-VII for specimen.)

Thus presently, separate Balance Sheets and Profit & Loss Accounts are presented yearly for the IISCO, which includes the Burnpur Works, the Kulti Units and Mines/collieries.

The IISCO-Stanton Pipe & Foundry Company at Ujjain presents a separate set of the financial statements having retained its own corporate identity. Thus Ujjain unit accounts are not included in the IISCO financial statements. (Exhibit-VIII gives a five year summary of the IISCO financial figures.)

The accumulated losses of IISCO up to 1988-89 are around Rs. 709 crores. A Government loan of Rs. 239 crores

is expected to be written off, giving a total loss figure of Rs. 470 crores. In practice, the working capital (cash) shortages are funded by SAIL — In a sense the Rs. 470 crores can be treated as a loan from SAIL (depreciation charges amounting about Rs. 226 crores should be excluded for exact figure). A proposal is afoot to convert this loan to equity (with a matching cash grant being made available to SAIL by the Government).

Uneconomical units are being gradually phased out from Oct. 1988, and the loss for the year 1989-90 is expected to be around Rs. 70 crores. Of this, the Burnpur Works is expected to contribute 50%. From 1989 to 1995, the annual cash losses (including interest on bank loans, excluding depreciation) is expected to be underwritten by the Government. IISCO thus expects to start with a clean balance sheet after modernization. IISCO's after modernization, is expected to produce profits from the first year of operation.

Marketing

IISCO has a separate marketing department named as the Central Sales Organization, (CSO). CSO has a good customer service record. In the past, whatever could not be sold by CMO — SAIL was sold by CSO. CSO has 8 stockyards at Burnpur, Calcutta, Madras, Bangalore, Ghaziabad, New Delhi, Ludhiana and Bombay. Its products vary in cost from Rs. 6 a tonne (or air cool slag) to Rs. 13,000 a tonne (of Galvanised Sheet). Selling of scrap is done by Central Sales Organization with its own pricing. It is important to note that the pricing for all other iron and steel items are fixed by the Joint Planning Committee (JPC), which comprises representative from the Ministry of Steel, Railways, (which is also a major customer) and representatives from SAIL/TISCO, and mini steel plants. The saleable steel sold during 1988 was 412,000 tonnes, and is expected to be 310,000 tonnes during 1989. The CSO sells coal, and other by-products. They help in purchasing raw materials from outside and also market Kulti and Ujjain's products. The sales is done either directly to the major customers or through the stock yards.

There will be a reduction in the sale of saleable steel as production will decrease at the Burnpur Works till modernization is completed. CSO will also undertake the purchases of construction steel for modernization —(500 varied sizes of 100,000 tonne lot size).

Restructuring of the marketing system may be carried out to accommodate the changes during modernization and after. The CSO may be made to report to the Central Marketing Organization of SAIL (as against the MD IISCO, at present). The CMO has 46 sales outlets all over the country and is a larger organization with bigger turnover. This may be formally done through an Act of Parliament which would merge the two organizations. Problems of suitability integrating the present marketing personnel of CSO — within the CMO/SAIL structure has stood in the way of such a merger.

PRODUCTION SYSTEM

Steel Making Process at Burnpur Works

The Steel Industry uses process technology. The inputs-raw materials such as coal, iron-ore, dolomite, lime stone are transformed into outputs which are either semi-finished like ingots or fully finished products like structurals, rails, etc.

Coal from the collieries is fed into the coke ovens and various gases are removed from the coal. Heat is provided by the batteries and the metallurgical coke is removed. This is the first stage in the process. From raw coke oven gas, vital coal chemicals are recovered for manufacture of a number of by-products like Ammonium Sulphate, Benzol products and crude tar. Crude tar is used within the plant as a fuel for open hearth furnace. The clean coke oven gas is used as fuel for various units in the plant including coke over batteries.

The major inputs for the Blast Furnace include metallurgical coke, iron-ore, lime stone, dolomite, manganese ore, etc. Hot metal produced through smelting is either sent for steel-making or poured in pig casting machines for use at Kulti or Ujjain, or for sale to other customers. Slag produced in the process is supplied to cement manufacturers. The by-product blast furnace gas, serves as an important gaseous fuel for the plant.

The conversion of molten iron into steel is effected through the Duplex Process of steel-making, a combination of Acid Bessemer Converters and Basic Open Hearth Furnaces. In October 1988, the Bessemer Converter was removed from operation. The energy requirement is industry coke oven gas, furnace oil and crude tar.

Steel is conventionally steemed into ingots and supplied to the Blooming Mills where it is rolled into blooms and slabs. The Blooms and slabs are converted to Billets or sheet bar and fed to finishing mills. Some amount of Blooms/Billets are also sold to re-rollers.

A brief list of the major equipment in the Burnpur Steel Works is given below:

Table IV Brief Description of Main Plant

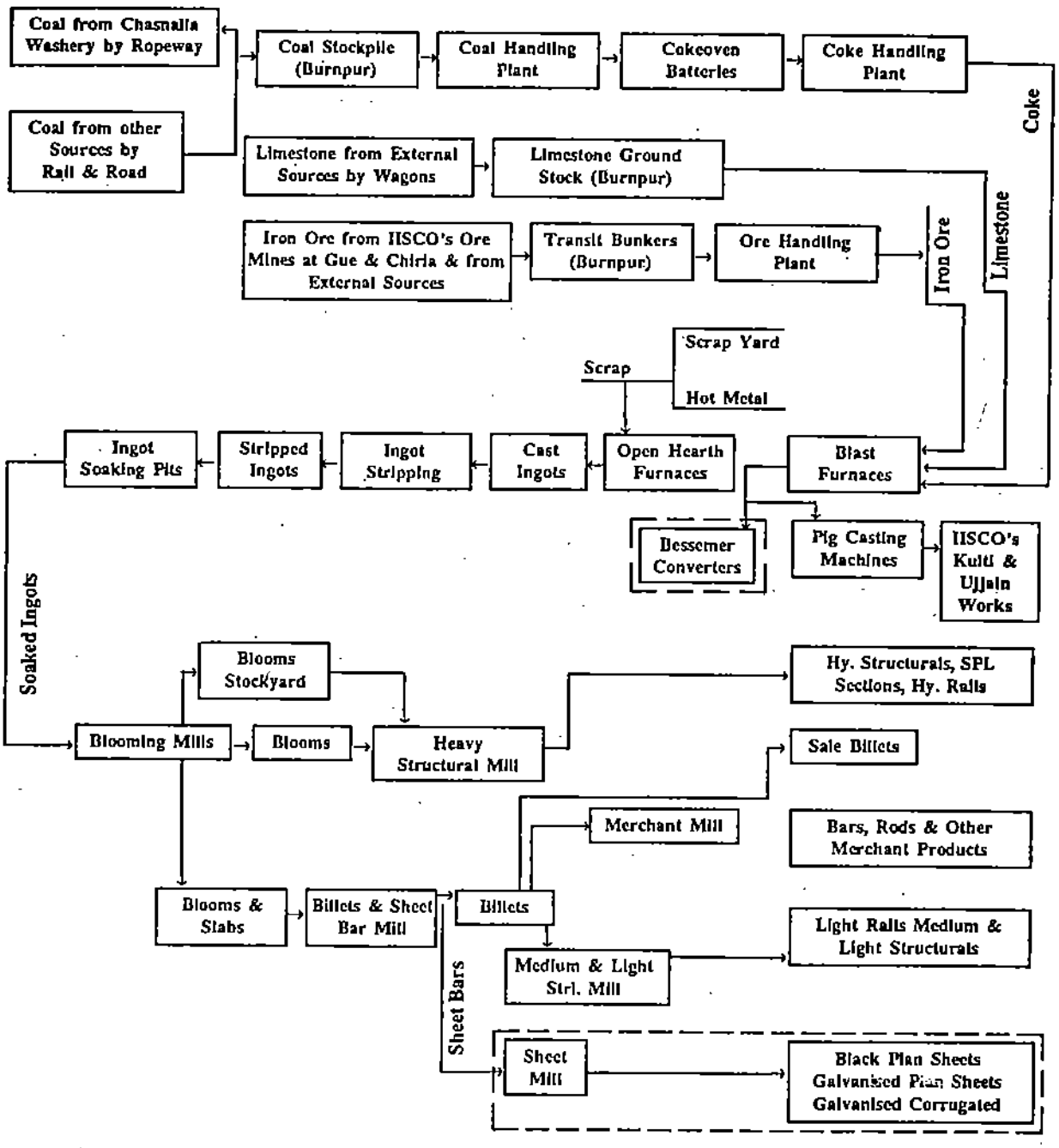
Department	*One Million Ingot Tonne Plant*				
Coke Ovens	4 batteries-306 ovens of 4.45 m height coal (dry) throughput 5,998 tonnes day				
By-product Plant	Tar, Naphtha, Benzol and Ammonium Sulphate units				
Blast furnace	Hearth dia	No. of fees.	Capacity per day	Working Vol (cbm)	
	(m)		(Tonnes)		Yearly capacity
	5.2	2	700	434	1.3 million tonnes
	7.6	2	1200	1041	
Pig casting machine	2 numbers-600 tonnes/day each				
S.M. Shop			Capacity	Type	
	3 Bessemer converters				Yearly capacity
	6.0.H. furnaces		225	Tilter	1.0 million tonnes
	1.0.H. furnace		100	Fixed	
Lime shaft kiln	4 numbers-30 tonnes each				
Rotary dolomite kiln	1 number-100 tonnes/day				
Rolling Mills					
Soaking pits & Blooming mill	32 numbers-40 tonnes each "Sack" 2 Hi-Reversing 42" x 96" size of rolls				Yearly capacity 1.0 million tonnes
Sheet, Bar & Billet Mill	"Morgan"; No. of stands in Tandem-10				Yearly capacity 8,00,000 tonnes
34" Strl. Mill (HSM)	1 2-Hi Reversing roughing stand 1 2-Hi Reversing intermediate stand 1 2-Hi Reversing finishing stand				Yearly capacity 2,50,000 tonnes
18" Strl. Mill (LSM)	2 3-Hi Non-Reversing roughing stand 1 3-Hi Non-Reversing intermediate stand 1 2-Hi Non-Reversing finishing stand				Yearly capacity 1,20,000 tonnes
Sheet Mills	'Lewis' Two, 3-Hi roughing stands 'Hyde Park'-Four 2-Hi finishing stands				Yearly capacity 1,20,000 tonnes
Continuous merchant & Rod Mill	2-Hi Morgan-19 stand Edgers-4 Nos.				Yearly capacity 1,50,000 tonnes
Services					
Power Plant	60 MW Installed capacity				
Water Plant	Make up-2, 045m³/hr., including 170 m³/hr. for drinking				
Township	23 million litres/day filtered, 9 million litres/day unfiltered				
Diesel electric locos	48 numbers-235/470/670/1100 H.P.				

Source: Statistics for Iron & Steel Industry in India, 1974, Ranchi.

Note: 1) One of the Coke Over Bar (No. 7) phased out in June 1989 and another (No. 9) under rebuild from 1987.
2) One small B.F (No.1) phased out in April 1989.
3) Three Bessemer Converters phased out in Oct. '88 and 100 tonnes stationary O.H. furnace phased out in private sector era itself.
4) Sheet mills has been phased out in June '89 and light structural mill will be phased out in near future.

The production Flow Chart, of the steel making process, presently is as under:

Table V Burnpur Works — Production Flow Chart



Note: Dotted lines indicate change in production flow with phasing out of units already completed.

Style

Style is what the top management of an organization does (as opposed to what it says). It includes tangible evidence of what management considers important by the way it collectively spends time and attention and uses symbolic behaviour.

The Burnpur Works was initially manned by European managers. Their benevolent and patriarchical style saw a bustling township emerge with schools, a park and residential quarters for the officers.

The Management style of IISCO was personified by its Chairman Sir Biren Mukherjee, for nearly four decades. The obituary of Sir Biren, in the IISCO Newsletter 'Yours Faithfully' — (Dec. 1982 issue) described his style in the following words:

"An era came to a close with the passing away of Sir Biren Mukherjee, on November 4, 1982. It was an era of entrepreneurial leadership, result oriented approach and authoritarian management. Sir. Biren was more often mentioned and referred to then seen or heard at Burnpur. His direct involvement with Indian Iron lasted for just a year short of your long decades but his association with the managing agents of the company was older by a near decade. He led IISCO to the pinnacle of its glory. He did not court the establishment, which cost him dearly."

Sir Biren Mukherjee had the distinction of arranging the first private sector loan for any industry in India from the World Bank. This was a US $ 31.5 million loan in 1953, to cover the foreign exchange requirements of the expansion of the steel plant to 700,00 MT/Yr. This is perhaps a measure of his stature in the country then.

There was a fedual streak in this style, which was revealed in the low housing level (below 17% in 1972) provided for the workers and staff. Only accommodation for officers was provided for fully, most of these officers being foreigners.

Due to rapid turnover of top executives since nationalization, no discernable personal style could be noticed. However, the advent of Mr. V. Krishnamurthy as Chairman-SAIL in 1985 has created a new style of management. Mr. Krishnamurthy is a "great helmsman" of the public sector. He has been credited with the successful establishment of the Bharat Heavy Electricals Limited (BHEL) and the Maruti Udyog Limited.

Business India (May 1-14, 1989) in an article headed "Reanimating a giant", credited Mr. Krishnamurthy with presiding over an organizational metamorphosis in SAIL. His stewardship was reported to have resulted in labour overtime cost being out down to almost nothing from Rs. 40 crores earlier, inspite of having 240 unions to contend with. This was done by taking the workers in confidence at every stage.

He had in his four years in SAIL, wiped out cumulative losses of Rs 300 crores and had initiated a capital spending programme of Rs 15,000 crores over seven years to double steel production and labour productivity — (to be funded only by internal accruals). The Burnpur modernization was one part of this programme.

A distinct feature of Mr. Krishnamurthy's managerial style was the regular meetings he held with shop floor managers, supervisors and trade union representatives, in all the steel plants. In one such meetings at Burnpur, held in November 1988, he emphasised that "What is required here is the determination to succeed.....you must learn to swim against the current,.....or get washed away".

The present Managing Director of IISCO Mr. M.F. Mehta has had the longest tenure since nationalization. (Six years so far). A veteran steel technologist, with more than thirty years of experience in the steel industry, he moved to Burnpur from the Bokaro Steel unit of SAIL — Bokaro records for production of steel were set under his leadership.

Mr. Mehta spends most of his time on the Burnpur Works. He makes two/three trips a month to Kulti and five/six trips/year to collieries and mines. The Ujjain unit is visited twice a year.

Shri. Mehta in an interview with the case-writers, explained his style of decision-making, "My day starts at 6 a.m. when I receive the previous day's production figures on the phone. Around 7 a.m. there is a tele-conference between various G.Ms from their homes — I tune into it at my residence. I visit the plant around 9 a.m. I don't believe in meetings (for decision-making). I meet people individually. I have allotted time to various functionaries throughout the day. Pending problems are solved on the spot during this period. The evening is devoted to paper work. No work is taken home."

Shri. Mehta is scheduled for retirement from service in 1990.

SAIL has a poor record in project implementation (see Table 8). The successful completion of the modernization programme at Burnpur (and in SAIL) appears to depend to a large extent on the quality of leadership and decision-making at IISCO and SAIL after Mr. Krishnamurthy/Mr. Mehta have retired.

Staff

Staff relates to human resources (i.e. the people in an organization) and its related dimensions — morale, attitude, motivation, and behaviour. Corporate demographic details rather than individual personalities; are included in this variable.

As on 1.6.89, all units of IISCO, together employees 37,210 employees comprising of 1,503 executives and 35,707 non-executives.

The break-up of non-executives in various units is as follows:

Burnpur:	Works	:	16,387
	Admn. & Other	:	4,309
	Total	:	20,696
Kulti		:	5,691
Collieries		:	6,774
Mines		:	2,133
Calcutta &Branches		:	413
			35,707

There are about 3,000 contract workers. The present Industrial Relations culture was described thus by the Personnel Manager.

"There has been no problem for the last three years. Plant personnel are looking forward to modernization. Though we changed duty timings and stopped overtime, there has been no protest. The workers have been told that the only alternative to modernization is shutting down the plant.

"We have five functional unions — INTUC, CITU, HMS, AITUC, BMS. Though INTUC is the recognized Union, negotiations have been undertaken with all the five unions. A common agreement is signed with all unions. We do not ascertain the actual numbers supporting each union, as this would be constructed as interference. Yes, the numbers given to the Labour Authorities (on Union strength) are fictious. There have been no strikes and lockouts since I have joined the plant. The State Government usually calls for a bandh three days in a year — special passes are issued to 3000 workers who are allowed to come inside. We have not retrenched anyone after the takeover in 1972."

The manpower strength at the time of takeover (in 1972) was 36, 604, of which 35, 740 were non-executives and 864 executives. After 1972 there was addition to the manpower and it reached the high of 43,597 in 1984. In the recent past manpower had been planned and brought down through a voluntary retirement scheme and by natural separation with not much addition to the employees strength. After modernization, the projected requirement of manpower according to the JICA report is 14,134 at Burnpur Works. The present strength of 20,696 non-executives has to be trimmed down. The new technology will call for new skills. The modernization apart from bringing about technological changes calls for changes in attitudes and skills of the employees, for which employees have to be retained. Around 1500 new recruits will be added to the existing workforce by 1995.

Voluntary Retirement Scheme

A voluntary retirement scheme which was implemented first by SAIL, was extended to IISCO in Oct. 1986. The retirement age which was 60 years at IISCO, was changed to 58 years for non-executives who joined after 06-01-79 and executives who joined after 01-06-73. The eligibility for the voluntary retirement are employees with 10 years of experience, and above 40 years of age those who retire at 58 years of age, and above 42 years for those retiring at 60 years. By March, 1989, 1,783 employees have gone on voluntary retirement. The distribution of voluntary retirement by year and status is given below:

Table VI Voluntary Retirement by Year & Status

Years	IISCO	Non-Executives	Executives
1986-87	325	319	6
1987-88	940	916	24
1988-89	518	507	11
Total	1,783	1,742	41

A task group has been appointed to identify the eligible employees and to counsel them to take voluntary retirement. At Burnpur Works, in the next four years, 1837 non-executives and 156 executives who are in the age group of 56-60 will retire by 1993. The employees between 40-55 years of a age will be the target population to be counselled for voluntary retirement. The agewise distribution of employees is given in the table below:

Table VII Agewise Distribution of Employees

Age Group	Non-Executives	Executives
42-49	4,991	356
50-55	3,390	244
56-60	1,837	156

Redeployment

With impending changes, the concerns of staff related mainly to their status after modernization. "The letters from the Managing Director's desk", in the Newsletter tried to assuage these concerns. The Sept. 88 issue reads,... "While it had been repeatedly emphasised that permanent employees would not be retrenched and that on redeployment an employee's employments would be protected, it is essential that employees earnestly take up whatever work they are offered. A sizable portion of our employees would have to be redeployed, in various activities, of modernization and later absorbed in the new plants. Some of our employees would also have to be redeployed within the existing plant."

With the assurance that no retrenchment is to be carried out, redeployment has become a major issue.

Redeployment Plans: The excess manpower — the less skilled employees above 48 years of age are to be redeployed in other areas like projects, for the construction work and 46 kms. of tract laying work at the site. Employees will also be used for dismantling of the existing machinery which are being phased out. Redeployment will also be done in the areas where contract labour is presently being used. Presently there are 900 contract labourers in the coal handling area. Contract labour jobs are to be abolished in the future. Union agreement has been obtained on this issue.

The present manpower distribution in the major areas is as under:

Table VIII Manpower Distribution in Major Areas of Burnpur Works
(as on 1.6.1989)

Area	Non-Executives	Area	Executives
Coke Oven	1530		
Blast Furnace	1124	Operation	222
Steel Melting Shop	981	Maintenance	284
Rolling Mills	2015	Service	127
Sheet Mills	1357		
Maintenance & Service	8023		
Total of Burnpur Works	16387	Total of Burnpur Works	633

The manpower requirement after modernization (as per JICA report) is given in the following table:

Table IX

Division	Manpower Estimates Numbers Required Presently (figures in brackets show requirement after step 2)	
1. Personnel and Labour Relations	305	
2. Finance & Accounts	82	
3. Administration	133	
4. Purchase	50	
5. Technical Control	237	
6. Production Control	349	
7. Iron Making	1,326	(1,605)
8. Steel Making	561	(777)
9. Rolling	2,953	(2,390)
10. Equipment Maintenance	4,725	(5,224)
11. Energy	391	
12. Transport	4,569	(4,201)
13. Laboratories	189	
14. Engineering centre	121	
Total	15,991	(14,134)

Productivity: First Step: 62 MT/Man Year.
Second Step: 152 MT/Man Year.

The redeployment exercise has to be carried out in a manner that the future requirement is met from the present manpower — who need to be suitably trained for their new jobs.

Skills

Skills are those dominating attributes or capabilities which demonstrate what the organization does best. Skills are those capabilities that are possessed by an organization as a whole as opposed to the people in it. It could be viewed as a derivative of the other 'Ss'.

At the Burnpur Works' skills in the pre-nationalization days were in the area of project implementation and production. For instance, the 'History of IISCO' claims that "the iron-making plant in the 1920s was upto date than any average European plant and the management was as efficient as in Europe". (page No.44).

The erection of the steel plant and its three expansions were all done within the scheduled time-limit and within the stipulated costs. The last expansion (in 1955) was completed 13 months ahead of schedule and saved foreign exchange due to import substitution. One of the Works' Indian managers received the prestigious Carnegi Silver medal in 1958, from the Iron & Steel Institute, London, for his contributions to steel-making process.

The post-nationalization era saw a distinct dilution in technical skill which was held as one of the causes for poor production performance. However, some of the Works' shop floor managers claimed that operating and maintaining the vintage machinery was itself a technical feat.....

The productivity of the Blast furnaces (two of which were established in the 1920s and two in the '50s) was said to compare favourably with those of even Bhilai or Rourkela (which had more modern machinery) in spite of poor raw material quality.

Marketing is another function where corporate skill is evident. An IMRB customer satisfaction survey ranked IISCO along with TISCO and ahead of CMO of Sail. The Chairman of SAIL and IISCO, Mr. V. Krishnamurthy has publicly praised the marketing department's performance — IISCO's CSO has sold products of other plants of SAIL at 2.5% commission, when CMO could not deliver the service. A crucial skill in the furnace will be ability of the Burnpur Works to complete the project within stipulated cost and time limits. SAIL's records in this area is poor. (See table below).

Table X Sail's Sad Legacy : Project Cost & Time Overruns
(from Business World March 1-14 issue, pg. 50)

Project	Capacity	Month of Govt. approval: Original/ (revised)	Approved cost (Rs. in Crores)	Final Cost (Rs. in Crores)	Costover-run (Rs. in Crores)	Time over-run (months)
Alloy Steel plant Expansion	100,000 tpa	July '81	66	113	47	32
Bhilai expansion	1.19 m tpa	Mar. '76 (Dec. '86)	938 (2,263) *	2,262	1,324	73
Bokaro expansion	1.17 m tpa	Mar. '73 (Dec. '82)	947 (1,638) *	2,072	1,125	131
Captive power plant, Bokaro	3 x 60 MW	Sept. '78 (Dec. '82)	76 (128) *	145	69	51
Captive power plant, Durgapur	2 x 60 MW	Sept. '78 (Oct. '81)	55 (82) *	125	70	54
Captive power plant, Rourkela	2 x 60 MW	Jan. '81	80	210	130	30

* Revised cost estimates (figures rounded to the nearest crore)

Source: Ministry of Programme Implementation Report, 1987-88

Retraining

The new technology to be adopted after modernization required new skills for operation. The learning of these new skills will entail attitudinal change — the plant, after modernization will be operating at four time the present production level with two-thirds of the manpower. For example the testing time in the laboratory which is presently 48 hours has to be cut down to eight hours.

A comprehensive two-year training programme has been drawn up. As phasing out operations start, at least 50 per cent of the employees below 48 years of age, are planned to be withdrawn for training. The withdrawal of

workers for training is being planned for synchronization with the phasing out of units. The training of employees for the future technology will be in the respective areas of work. The training will be given on the job in other steel plants where such technology is already available. The following table gives the summarised training plan.

Table XI : Training Plan in Man Days

Field	Training given by Indian Trainers in India	Training given by Trainers despatched by Eqpt. & Tech. Manufacturers at Burnpur	Training given by countries giving Eqpt. & Tech.
1. Sintering — Ore Yard	0	1,037	122
— Sintering	0	1,403	122
2. Blast Furnace — X	0	1,500	1,056
3. Basic Oxygen Furnace:			
— B.O.F	150	1,600	750
— Line calcining	110	0	110
4. Continuous Casting:			
— Blooms CC	378	158	189
— Billets CC	378	158	189
— Rolling Bar	0	530	1,050
5. Maintenance:			
— Machine Assembly	0	30	0
— Forging	0	50	0
— Central Maintenance	0	1,650	3,256
— Local	0	1,650	3,960
6. Power:			
— Receiving & Distribution	0	0	120
— Oxygen	480	120	0
— Blast Furnace	0	120	240
— Gas	0	120	240
Grand Total:	2,096	10,126	1,404

The Burnpur Steel Works, had been regarded as a model steel making unit, perhaps in Asia for much of its existence. The last twenty years had seen its performance and reputation dramatically slide-downwards. A stage had been reached, where the possibility of the Works being shut down was being considered as a possible strategic alternative. The Managing Director, Mr. M.F. Mehta realised that the Burnpur modernization was a complex task. The "infusion of technology" solution could not alone suffice. Mr. Mehta was also acutely aware, that the restructuring decisions that had to be taken, could either rebuild the works as a model steel plant, or push it towards the path of getting wiped out of existence.

LARSEN AND TOUBRO GROUP

Starting in 1938 as a partnership of two young Danish engineers, L & T had grown by mid-1981 into a group of Indian companies with a work force of over 11000 employees, a combined annual turnover of about Rs. 200 crores and a reputation as one of the most progressive engineering organizations in the country. The parent company's total assets were currently over Rs. 84 crores, 1980-81 sales turnover was nearly Rs. 145 crores, and the company was 97% owned by around 40,000 Indian share holders. (see Exhibit 10 for last ten years' performance data.)

Brief history

The original architects of the L & T Group were Mr. S.K. Toubro, a civil engineer, and Mr. Henning Holck-Larsen, a chemical engineer. They initially worked for F.L. Smidth & Co. of Denmark which sent them out to the subcontinent in the 1930s to commission and manage a cement plant each and to make a study of the Indian cement industry with a view to assisting in a merger of the existing concerns. The companies which subsequently merged formed the Associated Cement Companies, currently India's largest cement producer.

Branching out on their own, Larsen and Toubro started an agency to import Scandinavian equipment, chiefly in the dairy and refrigeration businesses. Polson's Anand dairy was equipped by the fledgling partnership. However, the onset of the second world war disrupted their trading plans and forced them into ship repair and, when the war ended, into manufacture of simple dairy equipment.

After the war, L & T acquired 300 Caterpillar tractors, many of them brand new, which happened to be surplus to the US Army as it was departing from India. At that time, it succeeded in securing the coveted dealership of Caterpillar Tractor Co. (USA) for selling earth moving equipment and parts and providing after sales service. Consequent to the 1946 deal with Caterpillar, L & T purchased 20 hectares (50 acres) of land at Powai, outside Bombay, in 1948 though they used only 2 ha for Caterpillar servicing, storage, demonstration and other purposes.

Another activity with war-time origins was civil work and mechanical erection associated with installation of industrial plant and machinery. A subsidiary named Engineering Construction Corporation was set up in 1944 for this purpose. L & T thus went in for the import and installation of industrial equipment also in a big way, after the war. Its emphasis, reflecting the Caterpillar influence, was on careful and complete services to its customers based on the best available technical know-how.

Thus two broad business areas developed in L & T. The bigger one was the Caterpillar agency (which came under Mr. Toubro's Wing) and the other was the import and installation of heavy plant, an activity in which Mr. Larsen took the main interest. In 1946, the firm approached Mr. Mangaldas Desai for funds, was converted into a private limited company and in 1951 into a public limited company. His son, Mr. N.M. Desai, joined the managing agency in 1946 and the board of L & T in 1966. He has been the Chief Executive Officer of the company since 1977 and Chairman and President since Mr. Larsen's retirement in 1978.

From Marketing to Manufacturing

By 1957, the national foreign exchange stringency led to increased pressure from government to manufacture rather than import equipment. Although L & T had embarked on manufacture of crown corks and bottle closures virtually from its inception (in partnership with foreign companies) it was only around 1959 that the company made a major departure from its selling and installation/repair service activities into manufacture of major dairy equipment. This was followed by the manufacture, of switchgear and petrol pumps. Switchgear manufacture, in fact, started out on an informal basis with merely an understanding between the company and one of its principals, L.K. However, within a few years L & T had become a force to reckon with in low tension control and switchgear manufacture, selling this equipment to virtually every major Indian industry in competition with multinationals like Siemens.

L & T also started to make plant and equipment for process industries from its early beginning with light fabrication of dairy plants. L & T moved into manufacturing involving high technology and very strict tolerances

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Prepared by Prof. Labdhi Bhandari, Prof. G.R. Kulkarni and Mr. P.S. Thomas of the Indian Institute of Management, Ahmedabad with the kind cooperation of L & T management to serve as a basis for discussion.

of stress, temperature and pressure. "Today", according to its 1981 institutional advertising, "we design, manufacture and install plant and equipment for every major national project covering vital human needs like food, chemicals, petro-chemicals, fertiliser, cement, steel, paper, nuclear power..... We have even extended the limits of our capabilities to cover space technology in order to support the nation's plans to establish effective satellite communication systems."

L & T had been keen to establish a manufacturing base for Caterpillar products in India. In 1962 it entered into a 50:50 joint venture with Caterpillar and called it Tractor Engineers Ltd. (TENGL) for making track and under-carriage parts of crawler tractors — the parts most subject to wear and tear. However, the manufacture of prime products with Caterpillar collaboration would not be undertaken as Government of India, in the meantime, promoted BEML in the public sector in collaboration with Komatsu of Japan for local production of such equipment. Since L & T had built up a group of Caterpillar trained personnel numbering several hundred it sought and received Caterpillar's agreement to deploy them for marketing and servicing French designed Poclain hydraulic excavators which L & T undertook to manufacture. The first Poclain machine rolled out of the Bangalore factory of L & T in 1975.

Diversification

During 1977-78, L & T's Board of Directors took a major decision to enter the cement manufacturing industry. The company launched plans to construct the nation's largest cement plant at Chandrapur in Maharashtra with a 1.1 million tonne per year capacity. While up to date technology and design of the plant were to be provided by F.L. Smidth & Company, fabrication and construction were to be done by L & T units themselves. The plant was expected to go on stream in early 1983. Other large business houses were also planning to implement cement projects.

A decision to enter the bulk carrier shipping industry was also announced by the company recently. In addition, at L & T's annual general-body meeting in August, 1981, Mr. Desai spoke of plans to undertake further diversification possible in the caustic soda and sponge iron/alloy steel lines.

Geographic Reach: A Multi-plant Multi-location Business

L & T's main manufacturing base was situated in an idyllic setting (with a lake, hills and woods as a backdrop) at Powai. Located 25 km north of L & T House, (the company's Bombay headquarters) the 40 hectare industrial estate had a built up are of 1,20,000 sq.m. (1978) up from less than 3,000 sq.m in 1948. Of the built up area, as much as 36,000 sq.m. were devoted to metal fabrication facilities — one of the largest in the country — and 17,000 sq.m. to switchgear production.

Besides switchgear and the industrial plant and machinery produced through fabrication work, the other products manufactured by L & T at Powai were bottle caps and closures. Two of L & T's associate companies also had their works at the Powai base — TENGL and Eutectic Welding Alloys (EWAC for short) established in 1962. Other major buildings at Powai houses petrol pump and packaging machinery production units, a service station for heavy vehicles, a project execution unit, the R&D department and testing and inspection facilities. The Powai workforce was nearly 7000 strong.

As mentioned earlier, L & T had set up its hydraulic excavator manufacturing facility at Bangalore (on a 27 ha estate with a covered area of 10,000 sq.m.) in collaboration with Poclain of France, within 2 years of the start of the negotiations. And the cement manufacturing plant was coming up in Chandrapur District, Maharashtra. A new switchgear manufacturing plant was established in Faridabad (1976) near Delhi. Additional switchgear and light engineering facilities were coming up in a 30 hectare estate in Ahmednagar, Maharashtra.

L & T's subsidiary ECC had its head office in Madras. Another subsidiary, L & T McNeil, set up in 1972, manufactured a complete range of tyre curing presses, also in Madras. It was a joint venture with an American Company. Yet another Madras based unit of L & T was Audco India Ltd., an associate company, established in 1961, which manufactured valves in collaboration originally with a UK firm and then with a US firm.

Still another plant was that of Utkal Machinery Ltd. (UTMAL) which was located in Kansbahal, Orissa on a 600 acre (240 hectare) estate, from which it served the steel and paper making industries of the Eastern Region.

In 1945, L & T had two branch offices, one at Madras and the other at Calcutta. By 1957, there was a network of six offices including new branches at Bangalore, Cochin and Delhi. In 1981, L & T had 4 regional offices in Bombay, Calcutta, Delhi and Madras; branch offices at 11 other cities, and resident representatives in 20 more. ECC had its own separate regional office network.

Company Organization

The structure in the earliest days of the firm was rudimentary. An Engineering Manager was in charge of sales and an Administrative Manager looked after the office routine. Both reported to the two partners who divided the responsibility of overseeing the Caterpillar business and the heavy plant import and installation work as stated earlier. Even in 1956, the same basic organizational distinction was made though the sales function had expanded by then to include sales, service, manufacturing and the geographic regions. Administration had however slowly evolved into a treasury function.

Although a need was felt in 1956 itself to set up manufacturing as a separate organizational function, and some moves to this end were made in the light of a foreign consultant's study, it was only in 1961 that the distinction could be made to stick. Besides the three functional areas (sales, manufacturing and finance/administration) which emerged, a fourth one — contracting — was added and placed under the Regional Manager (Madras)-cum-Head of ECC. Sales was organised by product division and geographical region.

In 1969, about the time the Managing Agency system was abolished, an additional level in the hierarchy was introduced by having the Chairman/Managing Director, Joint Managing Director, Deputy Managing Directors and Group General Managers. Each group consisted of some product divisions and their related manufacturing and design units, a region or two and two or three subsidiaries/associate companies. Thus from virtually a unitary structure, L & T had in an 8 year period veered towards something between a divisionalised and holding company structure.

After yet another reorganization study a closer shift towards the divisionalised form was introduced in 1974. At this time, a President's position (under the Chairman) was created and instead of Joint Managing Director and Deputy Managing Directors there were Vice-Presidents, four in number — Delhi (i.e. government relations), operations, Subsidiaries and Associate (S&A) companies and Finance. A personnel function began to take shape, under a Deputy General Manager reporting directly to the President. Regional Mangers reported to Vice-President (Operations).

By 1977, the President had become the Managing Director/Chief Executive Officer and Personnel and Organization was elevated to the Vice-Presidential level. The General Manager (Powal), whose responsibility was principally in industrial relations at the company's manufacturing base, switched from reporting to Vice-President (Operations) to Vice-President (Personnel and Organization). A new Vice-President (Planning & Development) position was created. Thus 6 Vice-Presidents came into being.

In 1980, Regional Managers were given dual reporting responsibility — to two Vice-Presidents (Operations). But the portfolio of each Vice-President (Operations) reverted to the earlier mix of product divisions, under Group General Managers manufacturing units and S&A companies. Now there were four groups two under each Vice-President (Operations).

This was essentially the 1981 structure too, though by this time six groups had come into being. Public Relations and Advertising, legal/secretarial and Internal Audit reported directly to Chairman & President in 1981. The business groups emerged as the profit centres with all functions integrated under Group General Managers. The selling function was carried out by divisional staff located at regions.

Business Groups

In mid-1981, L & T had 6 business groups consisting of manufacturing plants/companies, and product marketing divisions. The later handled both the company's own products as well as the items of other (mostly foreign) companies or principals. (Field Staff of the product marketing divisions reported administratively to Regional Managers and functionally to Divisional Managers.) These groups, under general managers were:

Group I
- — Caterpillar machines
- — Earth moving equipment
- — Spare parts and service
- — Petroleum & Drilling Equipment
- — Pumps

Group II
- — Cement machinery
- — Chemical plant
- — Food processing plants
- — Nuclear equipment

Group III	— Switchgear standard products — Switchgear (contracts) — Electronic controls, instruments
Group IV	— welding alloys, valves, packaging machinery — aluminium foil capsules, crown corks
Group V	— Cement project
Group VI	— Steel plant and equipment — Paper and pulp plant and equipment — Machinery — Foundry and furnace equipment

Group I

Scope: The group supplied CATERPILLAR and JOHN DEERE TRACTORS and other equipments, PEKINS diesel engines, HENSCHEE AND Brookville locomotives, ALBARET compactors, MANITOWOC cranes, LONGYEAR diamond core drills, JOHNSTON pumps, etc. It manufactured Poclain hydraulic excavators and track and under-carriage parts. TENGL's direct sales had grown from Rs. 677 lakhs (1970-71) to Rs. 3028 lakhs (1980-81) and indirect sales from Rs. 265 lakhs to Rs. 1437 lakhs over the same period* (see Exhibit 2 for details).

The group had a staff strength of over 1000 persons of which about half were in manufacturing and the rest were equally divided between marketing and service. Three-fourths of marketing staff were in the field while the remainder were at Head Office. The goal of the service division was to keep equipment working as this not only kept customers happy but generated business for the Parts Division.

Growth: This group had its origins in the Caterpillar dealership in 1945-46. Because of this, the product lines such as drilling equipment, pumps, cranes, etc., began to be added gradually. Originally, there was a trading orientation. With the formation of TENGL, manufacture of Caterpillar spares began. However, though TENGL was profitable, it had not grown, being unable to manufacture complete earth moving machines. One of L & T's major decisions (arising out of a perception of the business potential in irrigation projects) involved the establishment of a plant in Bangalore in 1974 to manufacture hydraulic excavators in collaboration with Poclain of France. What made this product different from others which L & T manufactured was that for the first time, motion was involved the equipment moved.

The other aspect was that at the time Caterpillar itself was only just introducing hydraulic excavators in the US market and was hesitant to launch overseas production. In the event, they were surprised by L & T's ability to stabilise production of and secure large orders for 3 cu.m., 300 h.p. machines with two-thirds indigenous content. The group was, however, still pursuing the possibility of making CAT prime products. L & T senior executives had very high grade for CAT which was generally acknowledged as having had a great influence on the company.

Another critical decision involving this group was the phasing out of the manufacture of drilling equipment for ground water and mining at the Madh Island (Bombay) plant and transferring the facilities to the jurisdictions of Group II in 1980. This was done because it was a low technology product, with severe competition and there was great seasonality in sales as customers were State Governments. Consequently working capital pressures were acute. Hence L & T decided to close down this activity.

Future Direction: The Group General Manager's current concern was to increase production at Bangalore from 70 or 80 units (50% of capacity) as there were orders for over 100 machines per year. He had an explicit long-term growth goal for his group. He was looking to earth moving and petroleum drilling and related equipment to provide much of the future growth.

Group II

Scope: L & T manufactured cement plant and machinery in collaboration with F.L. Smidth. It also collaborated with STRUTHERS WELLS, for multiwall vessels for high pressure process industries, WHITING CORP for evaporators and crystallizers for chemical and paper industries and NIRO ATOMIZER for suspended particle drying plants for chemical, milk and other products. As selling agents it supplied plant and equipment of BUHLER (flour mills, bulk handling plants) JOSEF MEISSNER, (chemicals, explosives plants) and LUWA (thin film evaporators), etc. Direct sales increased from Rs. 869 lakhs (1972-73) to Rs. 3244 lakhs (1980-81). Order booking rose from Rs. 1447 lakhs to Rs. 4876 lakhs over the same period (see Exhibit 5 for details).

* Direct sales were of items manufactured by L&T or bought from S&A companies. Indirect sales were of agency line items. On these the company earned commissions.

This group consisted of 2500 employees. Manufacturing was under a Joint General Manager. The product divisions were cement, chemical, food and nuclear.

Growth: It was an outgrowth of the company's early dairy and refrigeration plant agency businesses. L & T's first major workshop was set up in 1955-56. Gradually L & T not only overcame the "tractor-wallah" image but also overtook Aluminium Plant Vessels (APV) which had entered the plant and equipment fabrication business before L & T did. Over the years L & T improved its technology from welding thin gauge stainless steel sheets to fabrication of a variety of equipment (heat exchangers, evaporators, condensers, etc.) to handling more complex materials, thickness and pressure and temperature requirements and to greater and greater lifting capacities, e.g. nuclear reactors. Anticipating competition from smaller companies with lower overheads, L & T had been consciously moving into higher technology on a planned basis. It, therefore, became a "rat race" to stay ahead technologically.

Currently, it was probably the most complex and technology oriented group of L & T spanning a wide spectrum of engineering and covering core sector requirements of industry, mostly in the public sector, Cement machinery was about the only one made for the private sector. There were delays in getting public sector orders and often they came bunched together. Fabrication required a large variety of equipment and often entirely new products were involved. Moreover, there were well entrenched tendencies to import plant and equipment which the group had to fight against constantly. And lastly, the group lost many orders because of the purchase price preference enjoyed by public sector competitors like BHPV, BHEL, HEC and Jessop, etc. But the government had the resources to place orders, it was appreciated.

Government policy restricted the options of entering newer and newer lines. Government's tendency to allow imports also prevented incremental learning, e.g. handling thicker and thicker gauges of metal, etc.

There was a marked long-term cyclicality in Group II businesses. The food and dairy processing equipment was the mainstay of the company in earlier days but not so today. Similarly chemical plant used to be more lucrative than it is now. On the other hand nuclear which was losing was turning the corner.

The group had numerous competitors domestically and overseas. Domestic competitors included ACC Vickers, Walchandnagar, KCP, Vulcan Laval, Testeels, Anup Engineering, APV, McNwil and Major and others in the private sector; and BHEL, BHPV, HMT, HEC, etc. in the public sector. Because of constraints in raw material and sometimes standard-product availability the group competed in quality and not delivery schedules.

Manufacturing: According to a senior manufacturing executive, capacity utilisation had rarely fallen below 80% though such measurement was a complicated matter. A high emphasis was laid on flexibility—of machines as well as man. The equipment was largely general purpose. The workmen were also being constantly trained to handle different types of work. Each person had to be able to handle two jobs and he had to develop two backups for his own job. The work load was also sought to be distributed to some extent among Powai, L & T McNeil and Utmal. There were limitations to this as the Powai shops had succeeded in getting certification by the American Society of Mechanical Engineers to use their prestigious stamps on equipment—decade long process of qualification, not easy to replicate at other plants.

R&D: The group undertook R&D for cement plants, chemical plants and food processing plants. Initially the technical know-how and sizing, etc. were obtained from collaborators. This know-how was absorbed over a period of time and used in other applications. Technological absorption by R&D went on at the same time. It began to work on basic processes and process designs were suited to Indian market conditions. In this way L & T could start making equipment itself.

Future Direction: The VP (Operations) for Group II felt that its future was guaranteed because its business was geared to the core sector.

Group III

Scope: Switchgear, L&T confined itself to low tension (LT) equipment. Although at one time L & T marketed high tension equipment produced by Hindustan Brown Boveri in which it has a 26% share, this arrangement was currently inoperative. There were three divisions in this group. LT switchgear was differentiated into (1) standard products (switches, relays, timers, starters, contactors, circuit breakers, etc.), and (2) custom made products or contracts (e.g. switch boards, motor control centres, circuit breaker boards, etc.). The product range in LT switchgear had been widened over the years.

The third division consisted of electronic control equipment, e.g. static thyristor convertors for variable speed DC drive applications, static thyristor invertors as stand by power supply systems and hardwired static logic panels.

Here the competition was provided by BHEL, NELCO, Debikay, Cutler Hammer, and Siemens. In addition the group represented 10 world leaders in process control equipment such as FISHER, MILTRONICS, etc.

Group III which was geared to the power sector has the largest turnover in L & T: Direct sales of Rs. 4426 lakhs in 1980-81. (see Exhibit 4).

Manufacturing and R & D Organization: The group's manufacturing facilities were located at Powai (Bombay), Ahmednagar (Maharashtra) and Faridabad (near Delhi). Tooling, design, and quality control were all meticulously attended to. The group laid good stress on R & D. The "short circuit lab" was the only one in India besides the government's. Expansion of output had been continuous for virtually all lines.

Distribution: The group's products were sold through over 150 authorized stockists located in various parts of the country and controlled by the respective regional or branch offices of L & T. The company gave them handsome discounts and consistently used them even when the temptation to bypass them was strong, e.g. when there was a shortage of products in the market. L & T also had a training programme for its stockists. The approach was modelled on Caterpillar lines.

Growth: This group's products viz. switchgear and petrol pumps were the first to be manufactured by L & T in a big way in the late fifties. Product development had taken place to the point where 50% of switchgear products (by value) were L & T's own designs. A number of products (like starters, circuit breakers and control accessories, timers, flame proof switchgear) were wholly designed by L & T. But one variety of starter which was of LT/LK design was the single largest selling product.

L & T switchboards were backed by the following engineering services custom built design, component selection, product manufacture, quality assurance, installation and commissioning and after sales service. L & T had developed expertise in industrywise requirements for switchboards, e.g. modern cement projects.

L & T was one of the major producers of switchgear as a whole and especially standard products. The competitors for switchgear standard products were Siemens, English Electric, NGEF, TMG-Voltas, Cutler Hammer, and in a minor way, Crompton Greaves and Jyoti. For switchgear contracts numerous small-scale panel builders were the major competitors, though the first four mentioned above were also in the picture.

Future Directions: The group was expected to grow at an annual rate of 15% up to 1983-84 and slightly less than that thereafter. Profitability was excellent. The group had an explicit mission statement in which customer satisfaction featured prominently. Asked what enabled Group III to grow Mr. Desai felt that it was because they had the requisite motivation, there was an atmosphere of openness and innovativeness and mechanisms such as product audit committees and product development committees encouraged ideas. This also applied equally to other L & T groups, Mr. Desai added.

Group IV

Scope: This group dealt with L & T's bottle closure, packaging machinery, eutectic welding alloys and valves lines. It represented principals likes CRANE GROUP, CRISIS AND BAILEY-HOOGOVENS in valves. Direct sales increased from Rs. 468 lakhs in 1970-71 to Rs. 2948 lakhs in 1980-81. Indirect sales were negligible. (see Exhibit 5).

Organization: This group houses the first product manufactured by the fledgling firm of L & T viz. crown corks and aluminium foil capsules, both for bottle closure purposes. In addition it made sealing machinery for pilfer and non-pilfer proof caps, as well as packaging machinery such as cartoning, blister packing, pouch filling, etc., machines. These along with consultancy services constitute the Packaging Division of the group. The division's manufacturing facilities were at Powai. The second division in Group IV was eutectic welding alloys, a low temperature welding material. Dubbed a "fantastic" material by the Group General Manager, eutectic welding alloys were used for repairing a variety of products from automobiles to turbine shafts.

The final division of Group IV was the Valve Division. The products included here were plug valves, globe and check valves, etc. made from cast iron, stainless steel, alloy steels and other such materials. The valves were used principally in process industries like chemicals, fertilizers, petroleum, etc. They were produced by an associate company Audco India Ltd., located in Madras. The petroleum industry valves were, however, not marketed by Group IV's valve division but by Group I's petroleum drilling equipment, division.

Growth: The packaging division's sales were doubling every seven years, though competition was stiff in some years. L & T was a leader in eutectics which was produced in collaboration with British and American companies, by EWAC, a subsidiary of L & T at Powai. This division's sales was doubling every three years, the fastest growing division in Group IV. The valve division grew at about 15% p.a. There were many competitors in this line and L & T stressed the leak proof nature of its product.

Future Directions: Packaging was one business which L & T management felt it knew inside out, even though its technology had its intricacies, and it was therefore chosen for production in L & T's new 75% owned international venture in Singapore L & T management believed that they could be internationally competitive, provided raw materials were readily available. The division's domestic prospects were clouded somewhat by government's policy of reserving such lines for the small-scale sector.

Group V

Scope and Organization: This group was formed only recently and had been placed under a Joint General Manager. Its scope L & T's cement manufacturing project which was coming up in Chandrapur District, Maharashtra.

Rationale: As the rationale of the project in L & T goes, cement will, for a long time to come, continue to remain a core industry with good growth prospects. (see Exhibit 6). L & T perceived a need for an engineering house which could take on complete turnkey projects for cement plants. Almost all the leading designers of cement machinery in the world had their own in-house cement plants, according to L & T management as this facilitated adaptation and absorption of the latest technology. The experience of operating its own plant would significantly enhance L & T's turnkey capabilities, strengthen its internal research and development and help consolidate its leadership in cement technology, they added. By putting up a large capacity plant of 3,200 tonnes per day, compared to the maximum of 1,200 tonnes per day so far in existence in India, L & T would open up new vistas for exploiting the economies of scale in the cement industry.

There were other synergistic elements in L & T's cement project. Practically all groups within L & T were in a position to provide the requisite back-up for the project. Group I could provide the mining equipment, especially L & T-Poclain hydraulic excavators, Caterpillar equipment and drills. The obvious contribution of Group II was cement machinery. L & T had supplied 12 cement making plants between 1964 and 1976 and had access to the latest technology through F.L. Smidth & Co. of Denmark, world leaders in the field. Group III could contribute to the project through the supply of low tension switchgear, instrumentation and electronic controls. Group III could contribute to the project through the supply of low tension switchgear, instrumentation and electronic control. Group IV products like Eutectic low temperature welding alloys would have an important role in preventive maintenance and repair in the plant. Two of L & T's subsidiary companies had a major role in the project-ECC with the civil, mechanical erection, electrical installation and instrumentation expertise, and UTMAL by fabricating heavy equipment like crushers. Thus, the cement project would fully exploit the strengths of the L & T Group of Companies.

In keeping with its technological leadership in India. L & T planned to employ the most modern technology in the proposed cement plant. The pre-calcination technology selected by L & T was a proven but relatively recent development — since 1972. It had been successfully adopted in Japan. For L & T, the know-how would come from its collaborators, F.L. Smidth, who had sold a dozen such plants in countries like Japan, Spain, Canada, Brazil, and Egypt.

L & T went into cement with the government's blessings because of its highly professional management image.

Group VI

Scope: Group VI was recently carved out of erstwhile Group II by putting together two separate divisions under its umbrella. These consist of (i) steel plant, crushing plant equipment, paper and pulp and beneficiation plant and equipment, and foundry products, and (ii) rubber processing machinery. This group was the only one located outside Bombay. (It was head-quartered in Calcutta in view of the concentration of its markets in eastern region.) The sales of production lines falling within the purview of this group were of the order of Rs. 35 crores in 1979-80. Exhibit 7 given the sales of Group VI divisions.

Machinery Division: The division dealt primarily in rubber processing machinery used by the tyre and rubber goods industry. The machinery was manufactured L & T McNeil Ltd., Madras. It by also offered equipment from principals in the U.S. and Europe. L & T McNeil was set up in 1972 on the basis of projected demand for tyres and tyre manufacturing machinery and equipment. The fortune of this division had been fluctuating a great deal — sales came down from a high of Rs. 477 lakhs in 1976 to Rs. 70 lakhs in 1979. While there had been considerable improvement since (1981 sales estimated Rs. 250 lakhs) the division needed to diversify its activities and enlarge its product markets.

Utmal Division: This division primarily dealt with the products of Utmal Machinery Ltd., (Utmal), a subsidiary company located at Kansbahal, Orissa, catering primarily to the iron and steel mining, and paper industries. Utmal was established in 1960 as a joint venture between Larsen and Toubro Ltd., and three West German companies,

VOITH, GHH and KOPPERS. Until 1968 the company was managed by the Germans who held 75% of the shares. The company had not been faring well and hence L & T seconded three of its senior managers to Utmal in 1967 and then proposed a takeover of German interests. By 1973, L & T had acquired 61% shareholding while one of the German partners, VOITH, continued to hold 23% interest. In 1981, Utmal's Board resolved to amalgamate with L & T.

Growth: In the early stages, the emphasis at Utmal had been on gaining know-how and training staff in the metallurgical and heavy plant manufacture technology. Hence, it concentrated on job work involving iron and steel, paper and fertilizer, plant and machinery. With greater emphasis on indigenisation triggered by the foreign exchange crisis, Utmal begun also to undertake detail engineering work. The period 1968-78 could be characterised as that of engineering and manufacturing as distinct from manufacturing to external specifications in previous decade.

After L & T tookover the management of Utmal, a three year development plan was initiated to increase capacity to enable manufacture of larger size and higher speed equipment, chiefly paper mills. An improvement in the ratio of productive investment was also sought. And the company began to lay greater emphasis on 'project business' as distinct from piecemeal plant and equipment selling. For this purpose an operations engineering office was established in Calcutta. In just three years, the share of project business in Utmal's turnover had gone up from about 20% in 1978-79 (total turnover Rs. 15 crores) to about 40% in 1980-81 (estimated total turnover Rs. 28 crores). Over the years, market coverage had been expanded and product lines broadened. In addition to steel and paper plants Utmal now had crushing equipment, mineral beneficiation equipment — and industrial castings in its product line. With a workforce of 1950 people and a paid up capital of Rs. 335 lakhs, Utmal had emerged as the second largest subsidiary of L & T.

Future Direction: Utmal's business was primarily dependent on core sector industries. There had been a great deal of fluctuation in these. While the iron and steel industry offered good growth prospects, the same could not be said for paper industry owing to declining forest resources. Moreover, competition was growing both from the smaller companies that were cost competitive and the public sector that enjoyed price preference and sympathies of customers many of whom were also public sector. Utmal had not even reached half of its potential in terms of capacity and hence it needed to enlarge its product market coverage. Moreover, in its present product markets, it had to continually move towards larger and more complex products because of competition. For example, Utmal was no longer competitive in smaller paper mill business and had to move to a range above 150 tonnes a day where market was limited. Lack of standard products was a hurdle in exploring export markets.

Utmal had a unique industrial license covering a range of plant and equipment for core sector industries, only a fraction of which had been utilized. It also had a large estate of over 600 acres. Hence for L&T it offered future growth avenues.

Corporate Supervision

The above groups were further categorised and placed under the charge of three Vice-Presidents who were also directors of the company. Groups I, II and VI were under one Vice-President (Operations) while Groups III and IV were under another Vice-President (Operations). The former involved more project type work while the latter had more of standard product nature. Group V was, at present, under Vice-President (Planning and Development). The Vice-President (Planning and Development) thus wore two hats. As a staff man, he coordinated company wide strategic planning. As a line man he was responsible for the implementation of the cement, shipping and L & T (Singapore) projects.

A major subsidiary of L & T was Engineering Construction Corporation (ECC) which had its own board, the Chairman of which was Mr. N.M. Desai.

Engineering Construction Corporation

ECC was the first registered company floated by Mr. Holck Larsen and S.K. Toubro — in 1944 verus 1946 for L & T Limited. Its registered office was in Bombay but the head office was in Madras as it traditionally did a lot of business in the South. ECC was a giant in its own right, ranking 27th in the Economic Times 1977/78 listing by assets, (but still below L & T Limited), the only construction company to find a place in the ranking. Because of the nature of its business and its long history, ECC prided itself in giving 'concrete' shape to the sister companies in the L & T group. Powai, Madh Island, Faridabad, Ahmednagar, even UTMAL, EWAC, L & T-McNeil, AUDCO, TENGL, and now Chandrapur, plants all carry ECC's construction stamp.

ECC also worked with the other companies of L & T group wherever national projects took shape. ECC's input for L & T group's projects included electrification. The total value of work done by ECC for the L & T group was

of the order of Rs. 10 crores in 1977/78. Turnover was of the order of Rs. 35 crores at the time though this tended to fluctuate in different years.

In recent years ECC had bagged a number of international construction jobs chiefly in the Gulf region. Sri Lanka and other neighbouring countries. As such, it had an international reputation, being better known in some countries than even L & T itself.

ECC had a workforce of over 13,000 persons. They were employed under an Act different from that applicable to companies like L & T. Moreover, the nature of construction business was different from manufacturing and marketing.

The Managing Director's goal for ECC was Rs. 35 crores turnover with a shift in product mix away from civil work in the local market (where profitability was meagre) to the overseas market which was generally more lucrative. The company had succeeded in breaking into the Indian Railways electrification market which was hitherto the preserve of five companies. This was partly because the railways were pushing electrification to save on oil consumption.

Government Relations

On account of the unique nature of the Company's business and its distinctive competence in developing a high technology profile, interaction with Government had come to assume considerable significance in L & T. Originally a part of the Northern Region jurisdiction, this function was segregated from the function of managing the Company's commercial activities in the Northern region as early as 1970, under a General Manager with long and varied experience in the company. For the past few years, he had been redesignated as Vice-President of L & T and Executive Director on its Board.

The VP (Delhi) and his staff viewed their work as facilitators of performance by the different Groups and functions in the Company as a whole. They maintained close relationships with different functionaries in the Governmental system. This helped them maintain touch with policy and regulatory aspects of L & T's strategic thinking right from the inception of new ideas and proposals so that corporate planning and development could be made as efficacious as possible. Vice-President Delhi's office even initiated proposals on their own to L & T management, e.g. in manufacturing, marketing, procurement of technology, and so on, based on its assessment of the anticipated changes in the environment. The competition, especially in areas where high technology is imported, was such that it was difficult for a company like L & T to retain its unique advantage for long. Other competitors entered the areas with new products based on more advanced technology obtained from alternative sources. This compelled L & T to be always looking for fresh areas of high technology which it could enter; and vacate some of the areas of current operation. This also brought out the need for a continuous search for new business opportunities. The Vice-President Delhi's office played its due role in helping the Company search for new opportunities.

About 70 per cent of L & T's sales were to Government and Quasi-Government departments/projects. Vice-President Delhi's office performed the function of educating different people in Government about L & T's capabilities well in advance so that marketing was facilitated. The image of L & T as a company which could do justice to difficult and complex jobs involving high technology and superior engineering skills was carefully nurtured by the Vice-President's office.

Human Resources

L & T had always considered the human resource as its most key resource and had placed a great deal of emphasis on human resource development. L & T had one of the oldest and largest in-company training schemes in India. Its Graduate Engineering Trainee Programme was particularly well-known for recruiting and training very high calibre engineering talent in the country. L & T's emphasis on technical training was also reflected in elaborate and liberal provisions for training in collaboration agreements. The size of training effort in L & T could be appreciated from the fact that in 1980-81 as many as 517 L & T personnel went on external courses in India and abroad and 1778 took advantage of 70 in company programmes.

The fact that the company had been able to attract and retain high calibre staff was attributed by the Vice-President (Personnel and Organization Development) to ample growth opportunities in L & T, its ability to give responsibility at young age and the company's policy to promote from within. L & T's growth, both in terms of size and higher technology, had not only provided challenges and opportunities to its staff, but had, in his view, overtaken the company's human resource development effort.

At L & T individuals were assigned to different functions on the basis of their aptitudes determined at a very early stage. Generally, movement across functions had been low in L & T and there were practical difficulties in

doing so owing to the highly technical nature of the business. The management of human resources was entirely the responsibility of business groups who determined movement of people both within and across groups. The Central Personnel department only formulated policies. The company followed a performance appraisal in which individuals agreed their objectives with superiors and evaluated themselves on their achievement. L & T envisaged the introduction of career planning for its employees as a part of its human resource development effort.

While a high degree of commitment on the part of it officers had been a hallmark of L & T, growth had brought its own problems. With increase in size, officers had begun to get more distant from each other and the same degree of personal contact and cohesiveness could not be maintained. Attempts were being made to improve contact through participation in committees and other methods.

Commenting on management succession to Business World, Mr. Desai was emphatically of the view that the most effective chief executive is promoted from within the ranks who is familiar with the culture and personnel of the company. He was also not in favour of designating a successor and grooming him for the top position. "We have a corporate management team of six vice-presidents in the company all of whom are second in command. I would like my successor to prove himself and emerge from within the corporate management team .....(I) deally, the six vice-presidents would choose one amongst themselves to take over (from me) as chief executive", said Mr. Desai.*

L & T's emphasis on the development of human resources had received international recognition.** In fact, Mr. Larsen himself was the recipient of the prestigious Ramon Magsaysay Award in 1976. The citation read, in part: "In electing Henning Hólck-Larsen to receive the Ramon Magsaysay Award for International Understanding, the Board of Trustees recognises his signal contribution towards India's technical modernisation, complementing industrialisation with human concern.

Industrial Relations

In general L & T enjoyed good industrial relations at all its units. At Powai, the major works of L & T, the industrial relations scene had been peaceful until 1977. In 1976 a smooth changeover of unions had taken place. In 1977 however another changeover saw violence and consequent closing down of works. It took three months before operations could be restarted. L & T believed in having strong labour unions. While this meant harder bargaining it also ensured that agreements could be carried through by the unions.

L & T had active works committees and other forums where workers's representatives participated. The wages paid by the company fell at the top end of the competitive spectrum. However, growth in employee size had been carefully controlled by the company over the years.

Finance

In contrast to the Sixties when the company's financial condition was a little tight, the Seventies proved to be a good decade, financially, according to Vice-President (Finance). The financial management discipline had taken roots among the operating management of the company who managed the funds and were accountable for the same. For example each division and group was charged for the funds used by them. Although working capital management was decentralised within prescribed limits, the capital investment decisions and hence allocation of funds were centralized with corporate management. No worthwhile proposal, however, was ever held up due to lack of funds.

In 1970-71 L & T obtained Rs. 3 crores after merging with Canara Bank Ltd. Even before this, pay-out policies were revised to reduce outflow of funds on account of dividends (see Annual Report 1980-81). In 1972-73, a major capital investment of Rs. 5-6 crores was made in the company's new hydraulic excavator plant in Bangalore. This was the largest single investment till then, although investments in facilities expansion were being continually made. The company's current rate of internal funds generation enabled it to invest over Rs. 20 crores of its own funds in the cement project.

The company's liquidity position was reflected in a very low debt-equity ratio. This reflected the attitude of the management which was to always remain liquid. While others might attribute this to a reluctance to expand faster than it could, company executives attributed it to restrictive government policies applicable to large house like L & T. "Even in cement which we know so well", said Vice-President (Finance), "we have lost one year due to red tape".

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* Dilip Thakore, "Succession Planning in Indian Industry", *Business World*, August 31-September 13, 1981.

** "Indian Firm Stresses Personnel Development" *International Management*, September 1975.

With money lying in the bank, debt capacity under utilized and the operations expected to generate healthy resources, the Vice-President (Finance) was keen to have projects for investments in the pipeline — hopefully to 1984-85. Vice-President (Planning and Development) had to come up with such projects. "I told him if he didn't have anything also put up another cement plant", he equipped. "India can never have excess capacity in cement." (A recent news report stated that in 1980 India imported Rs. 40 crores worth of cement.)

Asked to compare L & T's growth prospects with TELCO and Reliance, Vice-President (Finance) said that TELCO had virtually exhausted its tax advantage while L & T had only just begun to avail of them. Reliance's growth on the other hand had unstable elements which could surface in adverse circumstances. L & T, for its part, had been able to weather a three months strike without appreciable effect on the balance sheet.

Planning and Control Systems

L & T followed formal systems for planning, budgeting and control and placed a great deal of emphasis on documentation. The company had an annual planning and budgeting system which began six months prior to the beginning of the year. On the basis of environmental analysis provided by Planning and Development department, and based on their analysis, the Groups provided inputs in terms of opportunities, constraints, etc. These were discussed by the Corporate Management with Group General Managers and on the basis of this Corporate Policy Guidelines were determined for the company and for each group. These guidelines covered major parameters of performance like turnover, profitability, contribution, working capital, investments, productivity, human resources, etc. The Groups then prepared their own divisional plans. These were then converted into detailed budgets.

For review and control, L & T followed a management planning and control system that entailed a performance review of each group (vis-a-vis budget) every month by the Corporate Management Committee. This took place in a meeting where all problems were discussed. The system was started in 1973 and had by now been institutionalised in L & T.

L & T had also instituted a Strategic Planning System with a three to five year perspective. It emphasised the identification of critical issues rather than generation of forecasts and financial data, although the latter were also needed. This was a three phase exercise. In the first phase key objectives were formulated covering various aspects like growth, rate of return productivity, human resources, social dispersal, etc. The relation to their businesses in the next phase some of these critical issues, which were accepted as really critical, were addressed and alternative approaches to resolution developed. Finally action plans were prepared for implementation. For new businesses however, Vice-President (Planning and Development) was responsible for strategic planning.

Chairman's Philosophy

The Chairman, Mr. N.M. Desai, confirmed that the concept of L & T as engineers was slowly giving way to the concept of L & T as managers. He said it was unlikely that one would find any formal blueprint for L & T's past growth. "We have been feeling our way. We may have been flying by the seat of our pants". He noted, however, that a company's business pattern was largely moulded by the one it started with. In L & T's case it was a product which required after sales service. This created a different set of exigencies than, say, a process industry.

Mr. Desai emphasised that in India acquisitions as a way to grow had very limited possibilities for a company such as L & T. He himself was averse to taking on so-called sick companies, although proposals for this came to him from time to time, chiefly from financial institutions. He disliked the problem of dealing with demotivated people.

Regarding technological development, Mr. Desai stated that L & T believed in charting a middle course between virtual dependance on foreign collaboration and outright rejection of such collaboration. Citing L & T's experience with switchgear he said that it was possible to learn from foreign collaboration and come up with products better suited to Indian conditions. The hurdles in the way of replicating this approach were two fold: one was to build up the collaborator's confidence in L & T's capabilities in a new field. Second, collaborators felt that government expected them to provide too much by way of indigenisation without compensating them adequately. And the process of developing new products on one's own was highly time consuming.

Asked about the role of top management as the company embarked on conglomerate diversification, Mr. Desai remarked that one had to guard against bureaucratic attitudes towards decision-making. Mr. Desai spoke in admiration of a leading business house which was a giant yet nimble and which knew exactly what went on in each unit. He said he would like L & T to continue as an alert organization, able to take advantage of opportunities for expansion and diversification with its substantial resources.

Inter-firm Comparison

To develop a comparative picture of L & T's growth, reference was made to Economic Times listings of public limited companies in the private sector. The period over which growth rates were measured was from 1970-71 to 1979-80, nine years.

Next, a sample of metal and/or electrical equipment manufacturing companies was prepared. Ideally, we should have identified only these companies which are similar to L & T in business profile. But this is not possible, as L & T's profile is not duplicated even approximately by any other company. Thus only top companies representing part of most of the L & T range were included. This resulted in a list of 12 companies including L & T. (It should be noted that the L & T data are for L & T Limited only as the figures for subsidiaries like ECC and Utmal are given separately by Economic Times.)

It is evident that L & T has enjoyed an 18.5 % compounded rate of annual growth in sales over the 9 years period, second only to Ashok Leyland's 20% rate.* (Its asset growth rates for an 8 year period was 16.6 higher than TELCO, Siemens and Voltas at least. (see Exhibits 8 & 9.) As a result, L & T is among the few companies (the others being Escorts and Mahindras) who have significantly moved up in the 1979-80 sales ranking compared to 1970-71. Ashok Leyland, Metal Box, and Siemens tend to form a second cluster of high performing engineering companies while Crompton) PEICO/Philips and GKW form a third such cluster.

TELCO and Voltas form a class by themselves as their growth rates and profitability are relatively low while absolute amounts are highest. ACC Vickers on the other hand represents a small but almost equally fast growing company. But in this particular sample it still remains last.

It is clear that L&T is among the star engineering companies with Escorts, Mahindras, Ashok Leyland, Metal Box and Siemens close behind.

* In a comparative analysis such as this, the use of a deflator to arrive at real growth would be immaterial. Suffice it to say that growth rates of 15 or 20% are obviously well above those for the industrial sector and also the average inflation rate.

Supplement* to the Case

LARSEN & TOUBRO GROUP

Since the close of Accounts for the period ending 31st March, 1981, the company has changed its year ending to 30th September for operational and administrative reasons. The first annual report for the period 1st April 1981 to 30th September 1981 reported very satisfactory working results for the company. Sales for the six months period amounted to Rs. 82.6 crores as against Rs. 60.9 crores for the same six month period of the previous year—an increase of 36 per cent.

Order booking at Rs. 119 for the same period was higher as compared to the corresponding period of the previous year by 39%. The order backlog stood at Rs. 164.1 crores.

The consolidated group turnover for the six-month period amounted to Rs. 128 crores as against Rs. 203 crores in the 12 months of the previous year.

Major Development

1. The company acquired two bulk carriers of 27,000 DWT capacity at a contractual price of US $ 18.3 million each in March 1982. The company also signed contracts for the purchase of three bulk carriers each of 28,300 DWT from Japan at a contractual price of million 4,567 yen each. These ships are of the most modern design and equipped with latest fuel economy engines. The 3 vessels ordered from Japan will be financed by Shipyard credit for a period of $8\frac{1}{2}$ years at an interest rate of $8\frac{3}{4}$ % per annum. Deliveries will be made during end 1983 and early 1984.
2. The company made satisfactory progress towards the commissioning of the cement project. The project will be commissioned by the middle of 1983.
3. The first international venture, Larsen & Toubro (Singapore) Pvt. Limited commenced production of aluminium foil capsules, vial caps and roll-on pilfer-proof caps. The sales for the first 9 months of 1981 of this company amounted to approximately Rs. 12 lakhs.
4. The company proposes to amalgamate its subsidiary Utkal Machinery Limited with L & T with effect from 31st March, 1981. Most of the necessary Government approvals have been obtained and the amalgamation is expected to be achieved by the end of 1982.

Looking Ahead

In a statement to the shareholders dated January 13, 1981, the Chairman stated that L & T has the necessary resources and the capabilities required for achieving growth with profitability. He identified improved technology, good quality, better productivity and effective cost control as some of the critical attributes that helped L & T to achieve a 20% rate of compound growth profit before tax over the last 5 years.

The chairman mentioned that the company is now in a position to undertake major expansion and diversification projects in view of the improvement in its cash flow and fund generation. He, however, emphasised the need for lower corporate taxes and tax concession for reinvesting profits in view of the Government's desire that MRTP houses should be more self-reliant for financing new projects.

Some Concerns

The Chairman was also concerned about strategic planning in the prevailing environment and of the organisation to respond to the needs of the company. With the large degree and frequency of fluctuations in Government administrative matters and the delays in implementation of vital measures affecting industrial production and growth, the task of achieving the required profits for growth is being made increasingly difficult. The demands on the managers and executives are therefore becoming more challenging. In this situation the critical factor is the attitude of the individual members of the organisation.

In his concluding remarks of the corporate policy guidelines addressed to the senior management of L & T, he had this to say:

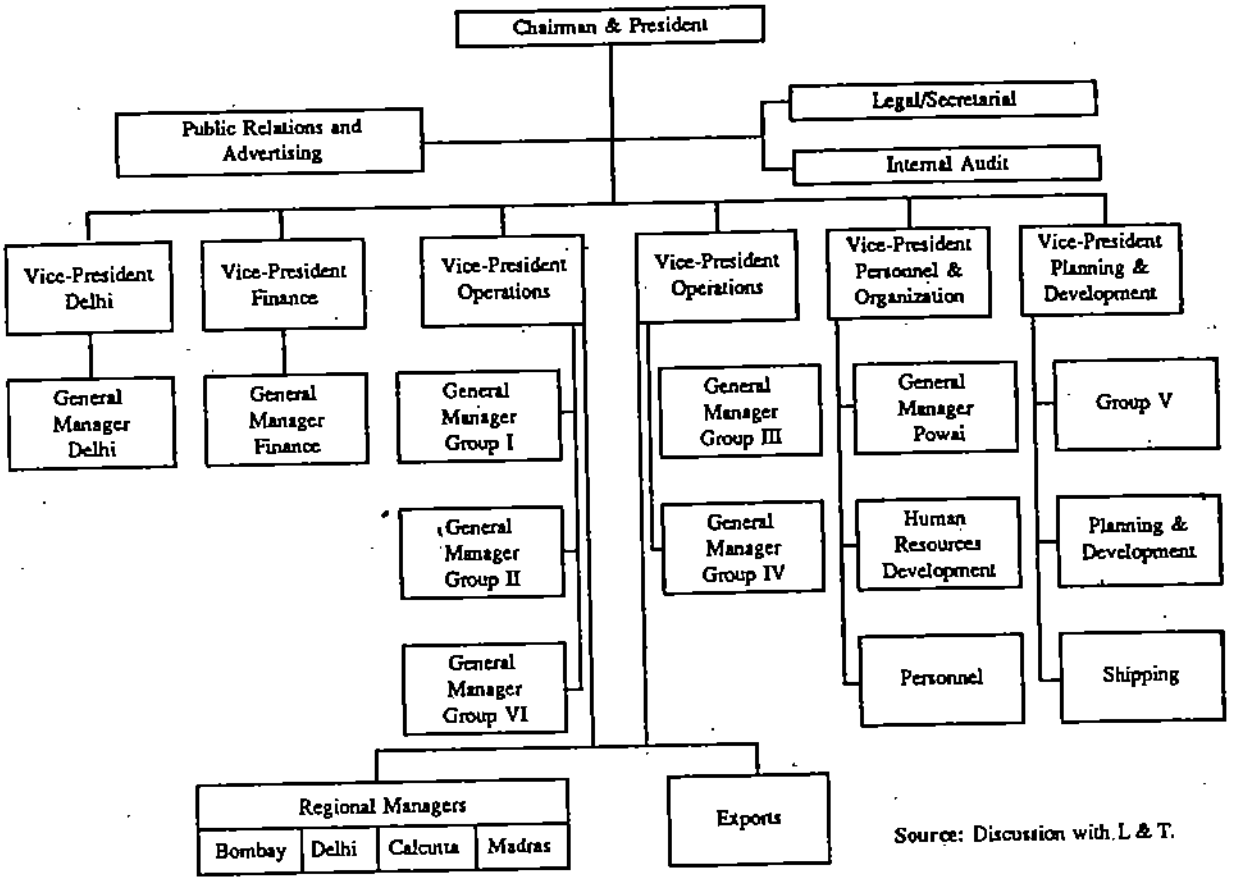
> "This corporate policy guideline has an introspective aspect and we must be strong enough to take the hard truth in a constructive spirit. The emphasis is on recognising reality, on achieving high standards and good quality. The key questions are:

* Prepared by Prof. Labdhi Bhandari with the kind cooperation of the management of L & T, to serve as a basis for class discussion.

Is L & T slowing down with size?
Is L & T losing the entrepreneurial spirit?
Is L & T becoming too impersonal and over-conformist?
Are L & T-ites dynamic than before?
Has the form and system become more important than the content?
Has all this happened in the wake of L & T's achievement of high success and a larger measure of prosperity?

We should think of these issues fairly and squarely at a time when L & T enjoys prosperity."

Exhibit 1 Organization Chart of Larsen & Toubro Ltd.



Source: Discussion with L & T.

Exhibit 2 Group I Data

Rs. in lakhs

	EM			CAT			PARTS			SERVICE		
	1970-71	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*
1. Sales												
Direct	—	380	1296	424	—	28	297	651	1086	27	32	39
Indirect	—	454	101	160	—	892	25	54	189	—	—	—
Total	—	834	1397	284	—	920	322	705	1275	27	32	39
2. Estimated Market Share of:												
Total Market												
Available Market	—	100	90	85	70	60	85	85	86	—	—	—
3. Compound Growth Rate p.a. in Sales (over previous period)	—	—	11%	—	—	—	—	18%	13%	—	3%	4%

	DRP			PUMPS			MANUFACTURING			TOTAL		
	1970-71	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*
1. Sales												
Direct	229	384	264	—	180	315	—	—	—	677	1627	3023
Indirect	80	459	249	—	—	6	—	—	—	265	967	1437
Total	309	843	513	—	180	321	—	—	—	942	2594	4465
2. Estimated Market Share of:												
Total Market												
Available Market	71%	68%	—	30%	30%	30%	—	—	—	—	—	—
3. Compound Growth Rate p.a. in Sales (over previous period)	—	23%	9%	—	—	12%	—	—	—	4%	22%	12%

Source: Larsen and Toubro.

Exhibit 3 Group II Data

						Rs. in lakhs
				1972-73		
INDICATORS	*CEMENT*	*CHEM*	*FOOD*	*NUCL*	*EXPIGEN*	*TOTAL*
1. Order Booking	335	736	313	20	43	1447
% increase	NA					
2. Sales	74	465	173	157	—	869
% increase	NA					
				1975-76		
1. Order Booking	56	1195	394	263	1/	1909
% increase	NA	41.0	83.7	125.2	NA	NA
2. Sales	298	887	342	225	3/	1755
% increase	(22.2)	115.4	25.2	8.3		NA
				1980-81		
1. Order Booking	2906	1417	263	260	— /30	4876
	63.2	(11.5)	(17.3)	229.1	—	29
2. Sales	1520	975	569	157	— /23	32.4
% increase	73.3	10.5	(26.2)	229.8	—	19.2

Source: Larsen and Toubro.

Exhibit 4 Group III Data

Rs. in lakhs

Year	*Direct Sales*
1959-60	4
1960-61	25
1961-62	39
1962-63	84
1963-64	162
1964-65	201
1965-66	242
1966-67	293
1967-68	315
1968-69	383
1969-70	547
1970-71	636
1971-72	675
1972-73	799
1973-74	1139
1974-75	1574
1975-76	1816
1976-77	2000
1977-78	1897
1978-79	2451
1979-80	3327
1980-81	4426

Source: Larsen and Toubro.

Exhibit 5 Group IV Data

Rs. in lakhs

	PACKING			EUTECTIC			VALVE			GROUP TOTAL		
	1970-71	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*	*1970-71*	*1975-76*	*1980-81*
Sales Value												
Direct	282	539*	1101	63.27	276.97	760.00	123	485	1087	468.27	1200.97	2948
Indirect	—	—	—	—	—	—	—	19	36	—	19	36
Total	282	439	1101	63.27	276.00	760.00	123	504	1123	468.27	1219.27	2984
Market Growth	10 per year		30%**	45%**	55%**		15% per year					

Notes: PACKING — * Tough competition in 1975-76.
EUTECTIC — ** Precise market growth figure cannot be given, as potential is considered very high and cannot be easily computed.
GENERAL — The figures shown above are at current selling prices, in each year, and do not account for inflation.
Source: Larsen and Toubro.

Exhibit 6

Cement Survey

Manufacture of cement started in India in 1904 when South India Industries Limited set up a plant near Madras. It didn't survive. Ten years later, Tatas set up the next plant Indian Cement Co. Limited at Porbunder. It had an annual capacity of 1,000 tonnes. Plagued by idle capacity, lack of demand and intense competition all cement plants in the country, except Sone Valley Portland Cement Co. Ltd., joined together in 1936 to form the Associated Cement Companies Limited. Today, ACC, with 17 of the 54 operating units in the country accounts for about 40 per cent of the cement production in India. A strong public sector is now emerging on the cement manufacturing scene, with Cement Corporation of India in the vanguard. With 54 factories capable of manufacturing 22 million tonnes of cement, India is the eleventh largest manufacturer of this basic commodity in the world. While the total is impressive, India's per capita consumption of cement per annum is

around 30 kg — compared to 750 kg in Switzerland, 630 kg in Austria, 600 kg in West Germany, 343 kg in USSR, 342 kg in USA and 305 kg in UK. With developmental activities accelerating Plan after Plan, the cement scene in India has been marked by shortages. Even so, India managed to export 400,000 tonnes, valued at Rs. 150 million, in 1975/76. In 1976-77 about one million tonnes of cement, valued at Rs. 325 million were exported. With petro-dollar backed construction activity going on at a tremendous pace in the Middle East and Iran, India was hoping to export more cement. The Planning Commission had suggested that cement export be raised to 1.5 million tonnes a year for five years, beginning from 1977/78. But, by the beginning of 1978, the State Trading Corporation of India was out in the market, at the instance of the Government, to import one million tonnes of cement from Poland, South Korea and Rumania.

This dramatic change in the cement scene in India reflects the serious shortfall in the capacity and manufacture of cement in relation to domestic demand which is increasing at the rate of 8 to 10 per cent per year. The installed capacity in 1979-80 is placed at 23 million tonnes and production at a little over 18 million tonnes. At this level, the gap between demand and supply is of the order of two million tonnes, which is expected to widen further in 1980-81 to three million tonnes. Such gaps in supply and demand for cement have given rise to black marketing in, and adulteration of this highly controlled commodity. Newspapers have been widely reporting suspension of construction work for lack of decent supplies, unearthing of cement adulteration factories and collaring of black marketeers in this building material.

As for the future, a study group of the Planning Commission had estimated that cement manufacturing capacity needed to meet the demand would have to go up to 40 million tonnes by 1983-84 — assuming 85 per cent capacity utilisation. Press reports indicate that the government has approved (including Letters of Indent) fresh capacities of about 28 million tonnes, of which five million tonnes will be in the public sector. But, that is saying nothing because some of the approved schemes may not materialise and new projects in the industry have a long gestation period. Thus the scope for licensing further new capacity for cement manufacturing is not exhausted.

Source: Larsen and Toubro.

Exhibit 7 Group IV

Rs. in lakhs

	Sales turnover				
	1970-71	*1975-76*	*1978-79*	*1979-80*	*1980-81*
Utmal					
Paper & Pulp & Beneficiation P&E	N.A.	378	841	1683	N.A.
Steel Plant & Crushing Plant Equipment	N.A.	386	538	538	N.A.
Foundry Products	N.A.	82	133	242	N.A.
Total Utmal	173	846	1512	2463	2750 (Est)
Machinery Division					
Direct Sales ex Powai	N.A.	N.A.	289	125	188
Agency business ex Principals	N.A.	N.A.	537	638	395
L & T McNeil	—	1979	1979	1980	1981
		477	71	330	250 (Est)

Source: Larsen and Toubro.

Exhibit 8 Basic Data of 12 Selected Private Sector Engineering Giants

	1979-80 Sales (crores)	*1970-71 Sales (crores)*	*Growth over 9yrs.*	*Rate of Growth per Annum*	*Bank 1979-80 Profit Ability*	*Bank 1979-80 Assets*
	1	2	3	4	5	6
ACC Vickers	49.2	10.9	4.5138	18.2	86	31
Ashok Leyland	157.7	30.6	5.1536	20.0	104	22
Crompton Greaves	83.1	25.7	3.2335	13.9	91	58
Escorts	171.2	38.4	4.4583	18.0	47	32
GKW	108.3	42.6	2.5423	10.9	117	30
L & T	122.2	26.4	4.6288	18.5	83	17*
M&M	129.3	29.3	4.4130	17.9	66	29
Metal Box	117.3	31.1	3.7717	15.9	53	41
Peico/Philips	89.5	34.9	2.5645	11.0	65	37
Siemens	93.9	24.2	3.8802	16.3	106	48*
Telco	401.6	126.0	3.1873	13.7	163	1*
VOLTAS	194.6	77.0	2.5273	10.9	192	23*

Notes: Cols. (1), (2), (5) and (6) are from Economic Times listings.
Col. (5) is from 251 companies
Col. (6) is from 101 companies
Col. (3) = Col. (1) ÷ Col. (2)
Col. (4) is compound rate of growth per annum of Col. (2) over 9 years.

* Annual growth rates of gross block over an 8 year period (1967-68) to (1975-76) were:
  16.4% (L & T)
  10.2% (Siemens)
  11.2% (TELCO)
  7.5% (Voltas)

Source: *Business India*, Aug. 21 - Sept. 3, 1978, p. 26 except for Voltas which is from its 1979-80 annual report p.18 and is for a 10 year period.

Exhibit 9 Relative Rankings of 12 Selected Private Sector Engineering Giants

1979-80 Sales	*9yr.Sales Growth (p.a.) Rank*	*1979-80 Profitability Rank*	*1979-80 Assets Rank*	*Asset Growth (p.a.) Rank**
Telco	Ashok Leyland	Escorts	Telco	L & T
Voltas	L & T	Metal Box	L & T	Telco
Escorts	ACC Vickers	Peico/Philips	Ashok Leyland	Siemens
Ashok Leyland	Escorts	M & M	Voltas	Voltas
M & M	M & M	L & T	M & M	
L & T	Siemens	ACC Vickers	GKW	
Metal Box	Metal Box	Crompton Greaves	ACC Vickers	
GKW	Crompton Greaves	Ashok Leyland	Escorts	
Siemens	Telco	Siemens	Peico/Philips	
Peico/Philips	Peico/Philips	GKW	Metal Box	
Crompton Greaves	GKW	Telco	Siemens	
ACC Vickers	Voltas	Voltas	Crompton Greaves	

* For a sample of 4 only. The growth rates per annum are for an 8 year period 1967-68 to 1975-76 in all cases except Voltas where it is for a 10 year period 1969-70 to 1979-80.

Exhibit 10(A) Larsen & Toubro Limited
(Balance Sheet from 1977 to 1980)

	As at 31st March 1981		*As at March 1980*		*As at 31st March 1979*		*As at 31st March 1978*		*As at 31st March 1977*	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
SOURCES OF FUNDS										
Share Capital	15,51,97,382		14,08,23,006		12,64,07,155		12,64,07,147		12,64,04,884	
Reserve & Surplus	38,47,59,133		29,93,05,980		21,57,42,457		16,40,68,65		13,26,40,217	
SHAREHOLDER'S FUNDS		53,99,56,515		44,01,28,986		34,21,49,612		29,04,75,812		25,90,45,101
Secured loans	11,78,01,062		9,37,47,404		13,14,92,172		6,04,80,422		6,60,03,506	
Unsecured loans	18,72,71,567		16,03,01,878		11,07,77,079		6,58,50,642		5,66,16,029	
LOAN FUNDS		30,50,72,629		25,10,49,382		24,22,69,251		12,63,31,064		12,26,19,535
TOTAL		84,50,29,144		69,41,78,268		58,44,18,863		41,68,06,876		38,16,64,636
APPLICATION OF FUNDS:										
Fixed Assets										
Gross Block	45,41,25,611		40,60,92,580		35,57,59,923		30,53,30,420		27,48,13,033	
Less: Depreciation	15,97,47,386		13,63,94,981		11,47,65,185		9,70,65,854		8,28,94,708	
Net Block	29,43,78,225		26,96,97,599		24,09,94,738		20,82,64,566		19,19,18,325	
Capital Work-in-progress	9,55,03,291	38,98,81,516	2,26,16,795	29,13,14,394	1,34,52,337	25,44,47,075	1,23,28,004	22,05,92,570	58,36,349	19,69,54,674
Investments		4,04,96,004		2,15,66,206		3,76,45,243		3,55,74,377		3,54,49,377
Current Assets Loans & Advances:										
Inventories	47,52,27,975		41,41,89,129		36,37,75,092		29,08,74,854		21,99,74,153	
Sundry Debtors	31,73,27,707		28,77,59,007		23,49,90,446		13,52,88,842		17,45,43,306	
Cash & Bank balance	1,13,85,799		2,59,84,763		56,91,849		26,12,553		98,84,919	
Other Current Assets	7,740		7,740		7,800		7,758		7,854	
Loans & Advances	8,22,89,827		7,54,69,350		6,61,77,162		5,82,65,417		5,27,45,430	
	88,62,39,248		80,34,09,989		67,06,42,349		48,70,49,424		45,69,85,662	
Less: Current Liabilities & Provisions										
Liabilities	40,40,00,671		37,56,62,693		34,70,37,138		29,98,70,593		26,61,20,866	
Provisions	6,75,86,953		5,59,83,436		3,12,78,666		2,65,38,952		4,16,04,211	
	47,15,87,624		43,16,46,129		37,83,15,804		32,64,09,495		30,77,25,077	
Net Current Assets		41,46,51,624		37,17,63,860		29,23,26,545		16,06,39,929		14,92,60,585
Miscellaneous Expenditure (to the extent not written off or adjusted):										
Deferred revenue Expenditure		—		1,35,33,808		—		—		—
TOTAL		84,50,29,144		69,41,78,268		58,44,18,863		41,68,06,276		34,16,64,636

Exhibit 10 (B) Larsen & Toubro Limited
(Profit & Loss A/c. 1977 to 1981)

	1981		1980		1979		1978		1977	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
INCOME										
Sales	1,53,72,61,738		1,30,09,85,212		1,15,45,05,590		76,46,94,072		80,13,83,599	
Servicing	59,46,527		63,14,158		55,63,110		45,34,274		43,93,513	
	1,54,32,08,265		1,30,72,99,370		1,16,00,68,700		76,92,28,346		80,57,77,112	
Less Excise duty	9,62,92,645		7,87,76,806		5,18,04,392		2,13,90,311		2,45,37,885	
		1,44,61,15,619		1,22,85,22,564		1,10,82,64,308		74,78,38,035		78,12,44,227
Commission, Compensation & Service Fees	2,86,97,969		3,81,97,018		3,50,85,983		2,96,90,347		2,21,83,566	
Other income	1,38,76,812		3,00,63,826		1,64,00,542		1,14,47,388		1,08,09,075	
		4,25,74,781		5,82,60,844		5,14,85,525		4,11,37,735		3,29,92,641
		1,48,94,90,400		1,29,67,83,408		1,15,97,50,833		78,89,75,770		81,42,36,868
EXPENDITURE:										
Materials, manufacturing & Operating Expenses	84,25,56,292		77,45,48,844		70,98,98,867		45,70,41,675		44,56,67,183	
Staff expenses	24,97,53,328		19,81,69,978		17,79,16,238		12,65,57,310		13,13,19,241	
Sales & administration expenses	12,58,69,788		10,92,19,848		9,34,05,424		8,03,21,540		8,27,82,089	
Interest and brokerage	2,38,13,882		3,41,59,114		2,52,67,293		1,57,78,297		1,22,40,299	
Depreciation & obsolescence	2,53,49,213		2,30,22,342		1,86,76,622		1,53,74,633		1,47,75,370	
		1,27,24,42,503		1,13,91,20,126		1,02,51,64,444	25,70,000*	69,76,43,455	40,60,000*	69,08,44,082
PROFIT BEFORE TAXES		21,70,47,897		15,76,63,202		13,35,86,389		9,13,32,315		12,33,92,785
Provision for taxes out of:										
Depreciation differences	1,06,81,000									
Other profit	10,83,19,000									
		11,90,00,000		7,70,000		6,10,00,000		4,40,00,000		6,40,00,000
		9,80,37,897		8,06,63,282		25,86,389		4,73,32,315		5,93,92,786
PROFIT AFTER TAXES TRANSFERRED TO										
Investment allowance	54,00,000		60,00,000		58,49,000					
Proposed dividend (Sub. to tax)	2,58,39,328		2,43,61,308		2,06,13,190		1,94,59,923		1,92,71,880	
General Reserve No.3/No.2	—		3,00,00,000		2,00,00,000		2,00,00,000		1,25,00,000	
		3,52,39,320		6,03,61,308		4,64,62,190		3,94,59,923		3,17,71,880
GENERAL RESERVE NO.1		6,28,08,569		2,03,01,974		2,61,24,199		78,72,392		2,76,20,906

* Investment Allowance Reserve.

Exhibit 10(C) Larsen & Toubro Limited
(Balance Sheet from 1972 to 1976)

	As at 31st March 1976		As at 31st March 1975		As at 31st March 1974		As at 31st March 1973		As at 31st March 1972	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
SOURCES OF FUNDS										
Share Capital	8,54,64,355		7,07,07,660		7,07,07,660		5,62,52,590		5,52,52,590	
Reserves & Surplus	12,48,71,837		9,42,68,602		7,22,76,215		7,14,66,192		5,78,47,971	
SHAREHOLDERS' FUNDS		21,03,36,192		16,49,76,262		14,29,83,875		12,77,18,782		11,41,00,561
Secured loans	5,20,18,032		1,12,87,240		7,07,15,381		4,03,31,053		6,71,09,437	
Unsecured loans	6,70,91,778		6,91,20,956		4,56,84,844		4,20,38,593		3,76,86,266	
LOAN FUNDS		11,99,09,810		14,04,08,196		11,64,00,225		8,23,89,645		10,48,75,703
TOTAL		33,02,46,002		30,53,84,453		25,93,84,100		21,01,08,428		21,89,76,264
APPLICATION FUNDS:										
Fixed Assets										
Gross Block	23,47,30,610		18,79,53,440		15,66,62,919		13,53,22,896		12,11,96,316	
Less: Depreciation	7,16,53,057		6,22,79,615		5,36,18,503		4,63,37,626		3,92,29,916	
Net Block	16,30,77,553		12,56,73,825		10,30,44,416		8,89,85,270		8,19,66,400	
Capital Work-in-Progress	1,15,27,605	17,46,05,158	57,42,645	13,14,16,470	24,49,401	10,54,93,457	82,49,523	9,72,345,793	46,21,040	8,65,88,248
Investments		3,54,49,377		3,25,16,871		3,16,54,555		2,19,10,795		1,58,15,081
Current Assets, Loans & Advances										
Inventories	10,20,82,284		19,16,52,627		12,58,05,749		8,99,13,011		7,16,65,794	
Sundry Debtors	16,70,68,977		11,98,58,592		12,15,14,056		12,41,90,220		12,16,45,149	
Cash & Bank balance	74,69,530		43,04,517		1,29,86,107		22,40,342		85,97,670	
Other Current Assets	6,951		6,461		7,256		6,090		5,079	
Loans & Advances	4,52,54,309		4,06,12,383		5,34,00,419		3,78,06,037		2,45,12,787	
	40,18,82,051		35,64,34,585		31,37,21,687		25,41,56,500		23,04,26,479	
Less: Current Liabilities & Provisions										
Liabilities	23,95,84,450		20,30,85,178		16,13,94,554		14,12,66,298		10,15,88,260	
Provisions	4,21,06,134		1,31,08,053		3,00,90,945		2,19,27,362		1,22,65,204	
	20,16,90,584		21,61,93,231		19,14,85,499		16,31,93,660		11,38,53,544	
Net Current Assets		12,01,91,467		14,02,41,354		12,22,36,000		9,09,62,840		11,65,72,935
Miscellaneous Expenditure (to the extent not written off or adjusted)										
Deferred revenue Expenditure		—		12,09,763						
TOTAL		33,02,46,002		30,53,84,458		25,93,84,150		21,01,08,428		21,86,76,264

Exhibit 10(D) Larsen & Toubro Limited
(Profit & Loss A/c 1972 to 1976)

	1976		1975		1974		1973		1972	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
INCOME:										
Sales	71,33,35,369		60,45,14,909		44,39,39,794		38,64,91,155		28,93,92,704	
Servicing	39,36,181		41,47,062		60,37,501		74,38,628+		62,66,982+	
	71,72,71,550		60,86,61,971		45,97,77,295		39,39,29,783		29,61,59,766	
Less: Excise Duty	1,91,14,507		1,73,85,821		1,95,18,627		2,15,46,350			
		69,81,57,043		59,12,76,150		43,54,58,668		37,23,83,425		29,61,59,766
Commission, Compensation & Service Fee	1,75,12,358		1,16,09,504		75,97,854		39,93,391		44,77,798	
Other income	86,13,849		80,22,590		1,20,41,137		1,04,79,917		81,04,931	
		2,61,26,207		1,96,32,094		1,96,38,991		1,44,73,308		1,25,82,729
		72,42,83,250		61,09,08,244		45,50,97,659		38,68,56,233		30,87,42,495
EXPENDITURE:-										
Materials, Manufacturing & operating expenses	41,55,82,156		35,05,01,004		25,95,85,310		22,38,02,601		17,57,03,957	
Staff expenses	12,11,63,002		11,15,72,798		8,70,79,863		7,60,10,350		6,06,59,576	
Sales & administration expenses	8,80,65,641		7,89,47,254		5,36,02,350		4,29,16,940		3,92,95,663	
Interest & brokerage	—		—		—		—		—	
Depreciation & obsolescence	1,33,13,095		94,97,520		77,81,493		84,02,524		58,06,409	
Development reserve	1,500		21,00,000		19,00,000		17,00,000		11,50,000	
		63,81,25,394		55,26,10,576		40,99,49,104		35,29,12,415		28,26,15,705
PROFIT BEFORE TAXES		8,61,57,856		5,02,89,668		4,51,48,555		3,39,42,818		2,61,26,790
Provision taxes		4,55,00,000		2,85,00,000		2,40,00,000		1,61,00,000		1,02,00,000
PROFIT AFTER TAXES		4,06,57,856		2,97,89,668		2,11,48,555		1,78,42,818		1,59,26,790
Taxation statement of previous years								5,13,379		4,97,891
								1,83,57,197		1,64,24,681
TRANSFER										
Investment Allowance reserve			—							
Proposed dividend (sub. to tax)	1,44,23,759		75,00,000		75,00,000		75,00,000			
General No.3/No.2	75,00,000									
		2,19,23,759		75,00,000		75,00,000		75,00,000		—
		1,87,34,097		2,22,89,668		1,36,48,555		1,08,57,197		1,64,24,681

General reserve No. 1

*Paid out of General Reserve.

+ Servicing includs service fees.

WANSON (INDIA) PRIVATE LIMITED

In August 1975, during a session in business policy in one of the Institute's management development programs, the casewriter and the participants were involved in a discussion on the role of leadership and ideology in building a business. One of the participants suggested, with some degree of conviction: "If you wish to see the importance of ideology in a real life business situation in India, go to Wanson of Poona. You will see how the personal philosophy of Mr. A.S. Bhathena, its founder and Managing Director, has been at work in creating an enterprise which has come to bear his distinctive values." The participant said that his company had excellent business relations with Wanson. He had also recently met Mr. Bhathena in a seminar organized by the Bombay Management Association and was greatly impressed by the latter's social conscience which, he felt, was reflected in each of his actions. The participant said that he was unusually moved by Mr. Bhathena's remarks at this seminar: "It is not possible for government agencies alone to tackle the formidable nation building problem. It behooves men in industry and business, along with other professional men, to give a helping hand in uplifting the masses and uprooting mental poverty of the people which is at the root of our national rot. This cannot be achieved unless men in senior management shed their patronising attitude of superiority towards lesser men who have not received the benefits of education and other pre-requisites of mental growth."

On return to Ahmedabad the casewriter decided to pursue this lead and learn more about Wanson India and Mr. Bhathena.

The Company as of 1976

Wanson India was incorporated as a private limited company in 1964, in technical collaboration with Wanson of Belgium, a small but fairly well-known company engaged in the manufacture of packaged boilers. Wanson India's factory was located in Chinchwad in Poona, a couple of hundred miles away from Bombay. Between 1965 and 1976, Wanson India recorded phenomenal growth and had achieved a premier position among the boiler manufactures in India. It had made good profit throughout this period and had diversified into a multiple range of products, which extended beyond those manufactured by Wanson of Belgium. The technical collaboration came to an end in 1975; but the Indian unit continued to develop and market new types of packaged boilers.

By 1976, Wanson had become an accepted entity in the boiler making industry with a reputation for quality second to none in the Indian industry. With a young and vibrant management team it had developed its own technology over the years and its products had gained acceptance both in Indian and overseas markets. It eventually became successful in setting up manufacturing ventures in Canada and was negotiating for similar ventures in Africa, Southeast Asia and West Asia.

The company projected an image of a creative and innovative organization, intensely nationalistic in character, to which the employees considered it a privilege to belong.

The Beginnings

Bhathena, the company's founder, began work in the early 1930's as a young Commerce graduate for a well- known Indian steel furniture manufacturer. He worked his way up from salesman to branch manager by the end of the decade. At the end of World War II, he resigned to start his own business — National Steel Equipment. His experience in steel fabrication and marketing channelled his interests into the manufacture of Fowler beds (adjustable eight position beds used mainly in hospitals). At that time there was no local production of these beds and hospitals were forced to import. The war barely over and soldiers coming home crippled, there was growing need for Fowler beds in hospitals. Bhathena obtained a patent for his beds, but profits were marginal. "We made one piece at a time. It was not exactly a commercial proposition," he said.

From hospital beds and other furniture for the invalid, National Steel Equipment expanded to high pressure stainless steel sterilisers and water stills for making saline solution. These yielded a better return on investment, still maintaining contact with the medical world. Bhathena found that whereas he used 200 sq. ft. of factory space to make a hospital bed which netted Rs. 120, a high pressure stainless steel steriliser, occupying the same space, secured Rs. 11,000. Yet, hospitals in India found his prices almost half of the equivalent imported sterilisers, a price parity he tried to maintain till to date. "Selling Fowler beds to hospitals enabled us to gain familiarity with the hospital as a customer," said Bhathena. "So we started looking for different products our salesmen could sell to the same hospital. Gradually we developed surgical beds, sterilisers, babies' incubators, water stills for intravenous injections and so on."

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Case material is prepared as a basis for class discussion. Cases are not designed to present illustrations of either correct or incorrect handling of administrative problems.

From hospital equipment Bhathena went into hospital appliances and later into catering equipment. These were manufactured in the same shop to reduce overheads. While his marketing overheads increased as a consequence, Bhathena could still profitably produce cooking ranges, fully automated dish washers and bulk rice cooking equipment.

At this stage, a senior government official asked Bhathena to consider making boilers. "A boiler is a fired pressure vessel. We were already making unfired pressure vessels, i. e., sterilisers. In collaboration with Wanson of Belgium we started making one type of boiler after another," Bhathena narrated the beginnings of his boiler making. "You have to realize that a boiler with a two-ton capacity can be like a bomb. There is a lot of responsibility involved," he continued. "There are more than a dozen boiler manufacturers in India, many of them older and better known than we are. But we are ahead in sales, popularity, and service and have been so for several years."

Product Development

The collaboration agreement with Wanson Belgium was signed in 1964 and in 1965 the company started manufacturing Vaporax.* The first new units were manufactured in an old shed in Bombay, which was, strictly speaking, unfit for making boilers. They shifted to Chinchwad Poona, in 1967. Until 1967, production was below standard. But even those units were sold.

Initially, selling boilers was a difficult task because National Steel Equipment was known in the hospital field but not in the engineering field. Funds for promotion and publicity were also limited. A further problem was the lack of familiarity with the coil-type water tube boiler in India as it had been using shell-type boilers since 1880. There were many objections when the new type boilers were introduced to the market, but eventually the products proved their worth. Until 1971, every boiler sold was a unique personal achievement for the salesman concerned. Design acceptance was, and continued to be a problem but the numbers sold, the other products produced and the image built over the years has finally given Wanson the enviable position of being in a seller's market.

The company now makes Vaporax in eight sizes. Each larger size was added gradually. The demand for making the larger units came as a result of opportunities and pressure from the market. The company currently had on its design board 15, 20, 30 and 40 ton boilers.

In its guest for markets, and in keeping with the competitive spirit, Wanson India sold Vaporax to every type of industry in India — small, large, continuous operation or otherwise, more industries than any other licensee of Wanson of Belgium anywhere in the world, or the licensing company itself. Wanson India has made continuous design improvements resulting in better efficiency of the compression chamber and greater reliability.

The company's licensing agreement with the Belgium firm also covered Thermopac, which supplies heat through heated oil. The collaborators provided the design and indicated applications for six to eight industries. The Indian company felt the product could be used wherever electricity is used for generating heat. This ideas was converted into a practical proposition, whereby the company found that the investment in a Thermopac by an industrial customer could be recovered in savings of electricity bills within six months to one and a half years. So the company decided to aim at replacing all electrical heating wherever feasible and to look for new markets in that direction.

New systems of heat transfer had to be designed for every industrial application. In this process Wanson developed know-how not only in erecting and commissioning newer types of boilers, but also on the process of transferring heat from one source to another — new ways of heat transfer applications. For example in the textile industry, a machine known as a stenter machine was used for treating synthetic cloth. Essentially, this was a 30 ft. x 90 ft. heat setting machine on which synthetic cloth was dried and heat-set. All heat was supplied electrically. Stenter makers themselves supplied the electrical heating equipments.

The electrical load was 90 kw. to 320 kw. and the average electricity bill was Rs. 50,000 a month. It took Wanson two years to crack the technology and break into the textile mill market; but 135 mills in India eventually switched to Thermopac as a heat supply system for stenters. Other companies also started making similar heat supply equipment, but Thermopac, being the pioneer, became a generic term.

The company's second success with Thermopac was achieved in a similar manner. Thermopac supplied heat only up to 290°C. The company decided to use higher heat conducting oils to produce a Thermopac with higher heating capacity.

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* VAPORAX is a fully automatic, forced circulation, water tube, packaged boiler, which gives steam at full working pressure within 2-3 minutes of a cold start. The first units had a steam output of 100, 300 and 600 kg per hour. Later models had a steam output of 1 ton, 1.5 tons, 2 tons, 2.5 tons and 3.5 tons per hour. Still later models of higher steam output up to 40 tons per hour have either been produced or are under development.

"Now we have discovered that the limitation is not in our capacity to modify the design, but in the type of oil which we could use for obtaining the higher energy yield."

When the company realized and recognised that it was in the business of supplying "heat in process," its product development assumed wider dimensions. One of the notable success was in developing spray paint drying chambers with air heaters. This product drew on the same basic technology, but applied to a new field. The product concept and design were developed within the company. The market for the product consisted of manufacturers of automobiles and garage owners who needed facilities for spray painting automobiles, scooters, etc. The product immediately found a large big overseas market, particularly in socialist countries. Within India too, sales increased.

With the onset of the oil crisis in 1974, the company demonstrated its innovativeness by being the first to produce coal firing boilers. The result was "MULTITHERM" — a range of boilers which could be either oil or coal fired.

Other products developed by the company to implement its concept of "heat in process" included:

1. HYDROBLOC — a boiler for supplying hot water. Major customers were hostels and hotels, both in India and overseas.
2. THERMOBLOC — supplies hot air, which the army needs in forward mountain areas and is also needed in large buildings in cooler climate countries. The company is trying to adapt it for drying purposes— particularly drying foodgrains and seeds.
3. VAPORJET— a product supplying wet steam for cleaning purpose, manufactured in collaboration with Wanson of Belgium.
4. Water treatment plants — to soften water before it is used in boilers.
5. INCINEX — for the destruction through incineration of waste material and refuse of every kind, biological, industrial and radioactive; conforming to antipollution standards and so on.

The potential for each of these products in their respective markets was substantial.

Approach to Marketing

These new products required tremendous market study prior to commercial production. Marketing manager, BKJ Rao, commented: "There is a basic difference between consumer and industrial marketing. Industrial goods are largely capital goods. They have a minimum life of ten to fifteen years. Buyers and sellers have to interact with each other from the start. The buyer has to plan well in advance, in many cases, while the factory is still under construction. The moment a sale is made, the buyer and seller are "married" for a life time. In the case of a consumer durable like a car, the service can be provided by any dealer. In the case of industrial equipments like ours, service has to be by the manufacturer or seller. Since any equipment gets periodically modified, the benefit have to be incorporated in the older clients' equipment also. We always maintain case histories of the boilers we sell. Our service and maintenance set up is elaborate, widespread and up to date. Our service department comes under marketing. It produces a newsletter, which outlines our pluses and minuses and is mailed to every client regularly. It is not just public relations gimmick. Unlike consumer durables, machine users must known every conceivable way of using the product. That means application engineering. Our strength in marketing Thermopac, lies in the fact that we believe we can convert any heat supply problem into Thermopac application engineering. And we got at it with full faith and vigor. We have had some interesting experiences with moulding plastics, cooking equipment in the best 5 star hotels in India, etc. and we look at such assignments as an association with concerns of the highest prestige and repute and in establishing that we believe in trying hard to convert a remote idea into a reality."

In Bombay the company had six sales engineers and four more were being appointed. The company maintained market research men in important centres and expected to get involved in turnkey jobs soon. Eventually, instead of having technicians to commission the boilers, the company planned to have people who understood the entire heating system of the specific client.

The Field Organization

The company maintained branch offices in different parts of India. Regular meetings were held, in which officers from the branches, as well as headquarters, participated. Subjects such as product planning strategy, market forecasts, arrangements for generating marketing information, factory marketing relationships, product profitability, long range plans, etc. were freely discussed. Ideas from personnel in the field offices were encouraged. Some of them made suggestions such as going into the manufacture of dyes, coal handling equipment, soil nutrients, automobile clutch plates and parts, etc. Coal fired boilers of smaller capacity (below 400 kg. of steam per hour) were suggested by others. It was prescribed that branch review reports should be sent religiously every month. Interbranch communications were

encouraged by suggesting review reports be exchanged between branches. Management emphasized that if any information was sought by one branch from another, it should be furnished.

There was particular emphasis on the "total service concept" from the level of Managing Director downwards, under which it was suggested that branch managers should make special efforts to imbue in their staff, from receptionist to service engineer, the need for using better language, conduct, attitudes and manners towards achieving "full customerization".

Production

By 1976, the company had increased in size substantially in terms of the number of products, the diversity of markets, the complexity of technology, and the volume of production levels. In one of the more recent conferences, Mr. Kabraji the Technical Director, raised the problem of coordination between the factory and marketing. According to Kabraji this was a useful discussion during which the role of the factory was considerably clarified. The broad objectives set for production included making more and better boilers, at a lower cost, consistent with good human relations. Two major decisions made at the meeting were: 1) to stop development of further components indigenously and in fact to reverse the cycle, if necessary, by starting to import some of the components which had already been developed locally; and 2) the major focus in the company philosophy would be on dependability and safety and only secondarily on cost.

Kabraji said the conference was able to agree to the concept of a rolling production program, based on a rolling market forecast to "fulfil our wish that we push out through the same shop floor, with the same overheads and with the same number of people, double or a still higher number of boilers than what we are producing today. Such a rolling program would solve the problems of production planning in the factory and also give sufficient flexibility to the marketing department."

Objectives and Philosophies of the Company

During the first conference of the officers of the company held in 1965, considerable time was spent discussing the plans and programs the company should follow and the approach it should take in identifying the stages of its growth. The following extract taken from the minutes of this conference has been referred to at every subsequent conference and more than once has been reproduced as part of the minutes. These, everyone in the company knew, reflected Bhathena's personal philosophy.

a) We are in business not merely to sell a product but to sell a service and we can only do this by offering a dependable product at a reasonable price, supported with specialist service both before and after sales.

b) We always take a long- term view of any situation, for it is our intention to stay in business as long as we can and generate the resources each year to grow from strength to strength.

c) We look upon business not merely as a source of income or profits but as a way of life, as a medium, for putting our talents to good use while at the same time affording us an opportunity to be of service to the community. The profits must inevitably follow.

d) We are not ashamed of being considered small but we would be ashamed to be looked upon as undependable or inefficient.

e) Our greatest single investment is not in our land and buildings, machinery or stainless steel but in our men and we stand or fall in exact proportion to the productivity of this investment. Our profitability and potential for growth must depend in the final analysis on the aptitude, resourcefulness, integrity, courage and dedication of our men at all levels for it is they who create all the other resources.

f) As an organization, we have a positive attitude to business. Obstacles and irritations are there to be overcome, not to be made as an excuse for inaction.

g) In our dealings with our customers, the State and the community at large, we do not ask for or expect favors — we offer a service and we demand a price. We would like the members of our organization to firmly believe in an indulge the principle of "deserve and then desire." As hardheaded salesman you may have little use for philosophy but I would not only add that if you have confidence in the product you sell and in the organization which manufactures and sells this product, you cannot help being a good salesman. Also if you know what it is we stand for, you will be in a better position to take the right decisions at the right time.

A similar conference of the officers of the company held in 1975 considered the question of the company image. According to Bhathena, "company image was attempted to be projected in the form of a 6 pointed star with integrity and efficiency at the core and technical excellence, employee relations, sales and services, managerial excellence, product quality, and financial soundness at the six points."

A series of interviews with the senior management members of the company provided the following additional insights.

Mr. Kabraji , Technical Director

As Technical Director of the company, Kabraji supervised the manufacturing and research and development functions. "We do not want to sell boilers as a hardware item," he said. "We want to sell them as a part of a software system . This is how we want to be one up on our competitors. We want to give higher heat outputs from the same small heat exchangers. We have been pursuing technology with this objective.

We believe in keeping overheads very low and our long run objective is to become boiler makers to the world. What has happened to Indian made lathes and machine tools is going to happen to our boilers. Today welders are paid ten to fifteen dollars per hour in the West and they cannot afford to do welding anymore. We will do the welding in India and make the boilers the world needs."

Dr. Joshi, R & D Manager

Dr. Joshi was a Ph.D. from IIT, Bombay. He visited the factory in 1971 at the instance of his professor who was advising the company on technical matters. At that time, the idea was to get Dr. Joshi to work on some new applications in the Thermopac division. Dr. Joshi said he visited the factory, liked it but was not sure whether he should join it. His intention was to proceed to the US like his classmates who had taken up Post Doctoral Fellowships. But after a short tenure with the company during which he was responsible for some significant R & D contributions, he decided to join them. "In 1973, I was sent to Europe. I was told by the Managing Director: 'visit any country you like.' People say, join Wanson and see India. In my case, it was, join Wanson and see the world.

"The attitude of the Managing Director was open. He did not ask for a bond from me for all the foreign trips I made. Only recently I went to the Burmingham Exhibition. I always tried to bring as many practical ideas as possible. I've found management's attitude is to develop a person into a better person, to offer opportunities for more and better work, to encourage him to find better ways of doing his own work and to make him assume responsibility early in his career. Management wants us to take the initiative and backs us fully when we undertake large tasks. There were some people who had not been happy with this philosophy. They had old world ideas of job security and so on on the one hand and desired clear cut instructions on the other. Those who were not happy left and in my opinion they were not fit for us anyway. This company does not believe in retrenching people. Management is patient and in any company's growth it is necessary to have a few loyal people. We're almost like a family team and I know everybody here feels the same way."

In Joshi's opinion, the company's objective is to develop products to give more satisfaction to customers. "We had inadequate knowledge of our products and we gathered our know-how from rejects. Though we had secured some design know-how from our principles, we have successfully bettered their designs in the context of application in our country."

Joshi's main tasks were to: 1) develop new saleable products; 2) improve performance of the existing products; and 3) maintain a pool of knowledge in the technology of heating and heat transfer. "We should not get involved in research — real basic research. We should instead give our researchable problems to engineering colleges and universities. Our job is to seek new applications and make them a success."

Col. J. Kumar, Human Resource Manager

According to Col. J. Kumar, the company placed great importance in recruiting the right kind of people. He said, the company's recruitment policy reflects Bhathena's views. He said, "during the interview we often find the person overawed. We should see that he is relaxed. This is not easy, because he comes to the interview with a mask. He is handicapped. Unless we help him remove his handicap, we are not going to be able to make a correct assessment. We try to see mainly two things: (i) does the individual have a kind of an inner policeman (monitor) within him so that we do not have to employ external supervisors or policemen to see that he works in the interests of the company. We believe his good breeding, family background, and family training would come to his help in difficult situations which he will have to face in his working life. We, therefore attach a good deal of importance to know about his parents, guardians, his background, etc. and (ii) we try to assess whether he has a high pressure Wanson burner within him.

"By 1975, Wanson employed about 400 people. We make constant appraisal of the market value of our employees. The turnover of employees in our company is negligible, inspite of the fact that we help our employees improve their market value."

Kumar showed to the casewriter a letter which the Managing Director writes to very new employee, welcoming him to the Wanson organization. It is reproduced as Exhibit 1.

Mr. R. D. Aga, Joint Managing Director

Mr. Aga, Joint Managing Director, has had a distinguished academic record at the Bombay and Cambridge (UK) Universities. His training has been in Commerce and Economics. Interest in professional management also took him to the Program in Management Development (PMD) at the Hardvard Business School.

Until the 1950s, all boilers in India were imported. Now about a dozen manufacturers produce different types of industrial boilers intended for different industries. Aga said almost all the Indian boiler manufacturers had remained in boilers. Only one of the major boiler manufacturers had been making heat exchangers in addition to boilers. As against this, Wanson India had diversified into different types of equipment, which might cater to different markets such as gain/seed drying — a complete system for storage of grains; paint drying, the whole system complete with ovens, with Thermopac forming only a small part and so on. According to Mr. Aga this had given the company some degree of stability.

For example eight new plants were coming up all over the country for manufacturing scooters, each of which would need a paint drying system costing Rs. 800,000 to Rs. 1 million. The World Bank was financing 18 seeds processing plants in India. These were opportunities worth pursuing.

Aga was appreciative of the fact that the company's marketing set up and in particular the service set up was the finest in the industry. And he claimed the sales force was by far the most aggressive in the country. There was a realization that for the client, if a boiler stops the whole plant stops. Wanson had established service centres throughout India and the company's service engineer was in a position to be at the plant the same day the complaint came. Since the company was conscious of the need to ensure that its boilers were properly handled by operators, it ran a training school for its customers and also maintained a pool of trained operators to be placed in factories where its boilers were likely to be sold.

At the same time Aga was conscious that the loose, illdefined organizational structure could become a weakness. Increasingly, executive time was being spent on mutual interaction rather than on the job. Possibly this was hangover from the small proprietary-type organization from which the company had grown. But it was apparent that the company had not been able to institutionalize decision-making.

Aga felt, the area of production planning was not satisfactory and resulted in poor control. There were several unfinished jobs on hand because a particular part was not available on time. Aga felt that too many decision in the company were made on a crisis basis. Although attempts had been made to introduce long-range planning, there was still no well-developed long range plan in operation. Future growth, according to Aga, was likely to bring problems in the area of finance as well as in the area of organizational arrangements.

Aga believed the time had come for the company to think in terms of separate divisions for each major activity such as the Wanson, Thermax, the Water Treatment, Agricultural Equipment, Export, etc. Each of these divisions could be a profit centre and the person in charge could be given authority and be fully responsible for its successful functioning. Aga also realized substantial effort would be called for in training the company's personnel for shouldering such responsibilities.

Mr. Aga said because we have great ambitions for the future, covering all our activities in the country and abroad, we must build up the image of the company as follows:

a) Thorough in its approach and execution;
b) Solicitious of our prospects and customers' interests;
c) Ample expertise in heat engineering;
d) Absence of intra or inter credibility gap;
e) Aiming at excellence;
f) Sensitive to the social and environmental needs;
g) A company which looks upon profit as a means to invest to grow and to serve; and
h) As an organization which believes in self-reliance.

Summing up the discussions during the 1975 conference of officers, Aga had said: "One danger I see in a moderately successful organization like ours is a creeping obesity. Activities (and even problems) become routine and are taken for granted. A pleasant middle-age euphoria sets in. The excitement and vitality which characterized earlier years becomes less and less evident. Until one fine day, a more vigorous competitor or a conspiracy of circumstances (oil crisis, credit squeeze) knocks you down and leaves you gasping. We may not have reached middle age yet, but thesigns are clearly showing. How do we break out of this, how do we build into our organization a perpetual discontent with the status quo, a fetish, a mania for thoroughness and excellence, a constant ceaseless reaching out? It is quite clear to some of us that our organization structure, network of systems and calibre of some of our managers in different areas will not sustain

the sort of growth, I would like to see in this company. Can we look at this painful reality in the face and make a determined effort to change and grow?"

Appendix

Interviews with Mr. A.S. Bhathena, Managing Director

The casewriter had a number of interviews with A.S. Bhathena, founder and Managing Director of the company. During these interviews, Bhathena was asked about his role in top management in shaping and guiding the destiny of Wanson India Limited. The following excerpts from these interactions give useful insights into Bhathena's personality and his functions as the chief executive of Wanson India Limited.

On His First Employer

Bhathena nostalgically remembers the 13 years he spent with his first employer. As an impressionable young man, he noted then that his employer had never been to college, and never had any formal management training, and yet he had obtained results that would appear astounding by any standards. "There had been many factors that had contributed to it but the one that clearly stood out was their PHILOSOPHY and their ATTITUDE towards quality, and therefore towards their customers, towards their men, towards money and possession in general, towards society as a whole and towards themselves in the final analysis."

On His First Entrepreneurial Effort

"I had the dubious distinction of being called an entrepreneur who was expected to use effective methods of management that obtained results. To my way of thinking, management philosophy, like happiness is a state of the mind. It is a question of developing certain attitudes and a sense of values towards persons and situations that make us more discerning and sensitive to our surroundings. Management philosophy may not be mixed up with management techniques. I discovered that I had to manage my own mind before I could manage someone else's or my own business. I was expected to sell my organized service to my clients and to the society which would incidentally also provide me with a decent livelihood. We have had no regrets ever since."

On Growth

"As we grew, we had to resolutely resist several tempting offers from foreign companies, who, under the guise of seeking collaborations with us, were making subtle attempts to swallow our enterprise and use it as a base for capturing the vast Indian market. Large Indian companies these days also show similar tendencies when they come across smaller units that operate efficiently. Attempts at swallowing them are continuous and varied. These large, affluent organizations do not realize what repercussions such amalgamations cause on the sensitive minds of young executives who have to face new matters overnight. The behaviour of powerful conglomerates in the USA attempting to throw their weight around in society sets one thinking about the optimum size of a human enterprise. How large one should grow? Is growth beyond a limit all that good?"

On Collaboration

"We started Wanson India with foreign collaboration. Instead of resorting to costly imports of capital goods for the manufacture of boilers, we decided as a measure of economy and self-reliance, to design and fabricate our own machines for turning out boilers. This has not only saved a good deal of foreign exchange, but we have infused in our young engineers and technicians a spirit of self-reliance that is hard to equate with a bank balance. Significantly almost all of this has been achieved by a band of modestly intelligent, devoted men with average talent. We do not claim to have an Einstein among us. Surprisingly the average age of our boys is 27 years. The point I stress is that ordinary people can produce extra-ordinary results."

On Product Policy

"We decided we should not make luxury items. Our Belgium collaborators asked whether we would be interested in collaborating with a Belgian beer manufacturer. We firmly told them that we were not interested, even though from the profit making point of view, beer could have been a gold mine in India. We told them we could help find a collaborator in India for them, but Wanson India would not make beer. No consumer item, no dealing with the caprice of the market. We like only an institutional bias."

On Leadership and Attitudes Towards Men

Bhathena made the following points to a group of Post Graduate students at the Tata Institute of Social Sciences, Bombay:

"Our company has two main objectives:

a) To run a profitable business; and
b) To create an atmosphere where work is fun."

"Mere techniques do not work at all times. In our company, we try to deal with the WHOLE MAN, working and living for 24 hours — and not just working for 8 hours in our enterprise. Hiring just TWO HANDS is an erroneous western concept which we should guard against."

"Top management may take a second look at the HUMAN BEING working with them."

"Ordinary people can do extraordinary things."

"There is no equivalent in English for the Hindi word "Izzat". Does it mean Honour? Commitment? Self-respect? A combination of these. May be even more! Whatever it sound in English, Indian workers do many a think for "Izzat"."

"For good management, we must appreciate the Indian cultural background. Most people come from villages. Villagers are extremely shrewed watchers. For an average Indian, the policeman's role is the most distasteful. So also distrust is distasteful. Western attempts at "influencing superior subordinate relationships", enforcing discipline through charge-sheets etc. are not likely to be successful ways of securing good management."

"A manager should give a goal to his subordinates which is bigger than himself. For example the worker should be told that the boiler he is working on is going to Atomic Energy Commission. The worker will give much greater attention than if he is told that he is helping to manufacture a two ton boiler. The goal however, should be genuine and not falsely exaggerated."

"As a society, we have to keep ourselves busy. We cannot allow our youngsters to become despondent. We have to make an attempt at changing attitudes particularly towards money, colleagues, relations, etc. We should avoid "manipulating" young men or our employees. Interesting and challenging activities have to be thought out and people have to be involved in such activities. That is the role of a leader/manager."

Exhibit I

Text of Typical letter from Managing Director, Wanson India (P) Ltd. to a new employee joining the Company

15th August 1973

Dear friend:

In welcoming you to our fold, let me try and acquaint you with our Company's basic philosophy and attitudes to enable you to understand us and enjoy being one of us in the shortest possible time.

Wanson (India) Boiler Factory was started in 1967, in Poona, not for the personal gratification of any particular individual, but as a natural extension of our earlier activity, National Steel Equipment Company, Bombay, which was started in a small way in 1947, for the manufacture and marketing of hospital appliances like High Pressure Steam Sterilizers, Water Stills, etc.

Our Board of Directors is composed of our * Chairman, Dr. S.K. Muranjan, ex-member of the Indian Tariff Commission, Dr. G.P. Kane, an eminent Chemical Engineer and former Director-General of Technical Development, New Delhi, Mr. R.D. Aga, an Economics Graduate from Cambridge (U K), Mr. K.K. Kabraji, an Electrical and Mechanical Engineer and the undersigned. Both Dr. Muranjan and Dr. Kane have been essentially teachers: we have not been associated with millionaires at any time. In due course, we propose to include on our Board some of our Senior Executives whose contribution to our growth has been outstanding.

Since our Company has been getting involved only with essential items needed for the country's economy and as our goal has been clearly defined, we try to encourage entry of only those young men who are earnest, competent, mature, sensitive to their surroundings, pleasant and positive in their attitude towards life, with a capacity to laugh at themselves, and above all show evidence of management muscle at senior levels. The fact that you are now within our fold would indicate that you do have most of these qualities in good measure.

* Dr. G. P. Kane is the Chairman of the Board in place of Dr. S.K. Muranjan who expired in June 1975.

This being a Human Enterprise and therefore fragile, we would like to handle it with great care. We generally trust people and like to be trusted: playing the role of a policeman all the time is distasteful to us. Delegation of authority is what we encourage. We like to work in freedom in the belief that you would enjoy doing your work in such an atmosphere and would like to be trusted with responsibilities. In such an environment, your contribution is likely to be the maximum and making a living would become incidental.

You will, therefore, see in Wanson (India) an absence of authoritarian rule or long drawn printed manuals. Incidentally, may I suggest that you use your freedom with great finesse, so that eventually you become more conscious of your responsibilities than your rights.

While all of us may not be equal in every respect, we endeavour to give equal opportunity to every one to grow with our organization. Accidentally, we may have employed "Brahmins" or "Kshatriyas", "Vaishyas" or "Sudras", Muslims or Christians, but we would very much like to see them all turned into "Kshatriyas" (Warriors) in a ceaseless fight against poverty, disease, communalism, despondency and indolence all around us.

We are an expanding All-India Organization and our growth rate is rather impressive, but please do not let success go to your head: we have yet to learn a lot. Please, therefore, help us remain students all our lives. Quality of life, not mere quantity, is what we are seeking. Simplicity and moderation in all walks of life is what we cherish: try to be YOURSELF at all times.

Above all, be bold and innovative in your sphere of work. Don't be afraid of making mistakes but try not to make the same mistake twice: we get bored with repetition of any kind. Our Management too makes a number of mistakes but the fact that our enterprise makes progress despite mistakes would indicate the type of attitude we would like you to adopt towards your work. Share cheerfully with your colleagues whatever you have or know. You will soon realize that sharing is fund and it enriches you.

Remember, young man, this is a competitive society where only the fittest can survive and, therefore, you will have to put in your very best effort with your team mates. There is no "boss" in our organization that will be paying your salary: you will have to earn your bread working in a team all the time to satisfy that most exacting "boss" — our Customer — who wants to get the best and pay the least. In admitting you to our fold, therefore, we are offering you a splendid opportunity to serve society with zeal and in the process to share in our prosperity.

We are very proud of our human resources who have been instrumental in putting us on the Boiler Man of India. In our effort to make a success of our enterprise, therefore, let us all work as sensitive members of a well-balanced orchestra, playing in harmony every minute. In short, let these attitudes and this philosophy get absorbed in your daily thinking and become part of your total values as swiftly as possible; then you will be entitled to be treated as a "WANSON GRADUATE".

To enable you to develop and advance within our organization, we have a number of training programs suitable for each area of activity and our Personnel Department will introduce you to these programs from time to time.

The accompanying little hand-out will indicate what you should know about your work, your privileges and responsibilities, areas where we are likely to assist you as a newcomer, and some of the DO's and DON'Ts inevitably associated with a human enterprise. If some points that affect you personally have been inadvertently omitted, surely you as a positive persons will not feel left out and sulk, but will go straight to the Head of your Department or our Personnel Officer and seek clarification.

In closing, may in once again welcome you to Wanson (India) and pray that you will help us to help you strengthen our Company balance sheet alongside our much more vital Community balance sheet with which we all are so intimately concerned.

Yours sincerely,

For Wanson (India) Pvt. Limited

A.S. BHATHENA
Managing Director

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