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UTTAR PRADESH RAJARSHI TANDON OPEN UNIVERSITY

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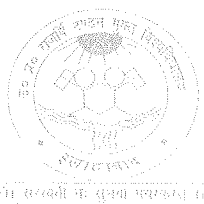
PGDHRD-02

Organisational Design, Development and Change

SECOND BLOCK

Organisational Design

Indira Gandhi National Open University



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PGDHRD-02
Organisational Design, Development and Change

Block

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ORGANISATIONAL DESIGN

BLOCK 2 ORGANISATIONAL DESIGN

This block comprises two units. One unit focusses on some critical dimensions of organisation design such as environment, technology, size, ownership, social change and human aspects. The other draws upon the works of Henry Mintzberg and Alfred Chandler and attempts to understand the basic parts of an organisation and the relationship between strategy and structure. The design and restructuring strategies are seen to depend on a host of considerations. Some examples and experiments in the Indian context are considered to understand the issues in relating organisation development strategies and organisation design choices.

UNIT 3 SOME DIMENSIONS OF ORGANISATIONAL DESIGN

Objectives

After reading this unit, you should be able to:

- understand the dimensions of organisation design; and,
- know how they influence the organisational design.

Structure

3.1 INTRODUCTION

Organisation is a framework that works when operated by people. The purpose or mission of an organisation provides the direction in which it moves. When the purpose is clearly defined, strategic choices to accomplish them will have to be made taking into account the resourse-mix, technology, over all structure and internal working of our organisation. Organisations exist and operate in some environment, both external and internal. The variables in the external environment are often not in the control of the organisation though it has to deal with them effectively. The aspects of external environment are multiple and include social, cultural, techno-economic, legal and political. The precise manner in which some external factors impinge on an organisation (or vice-versa) may depend on the latter's size and the nature of its ownership. It is not proposed to discuss in this unit all these aspects in length. However, to illustrate how even the organisation could impinge on the environment and macro policies one might consider the Bhopal incident whereafter pollution has become a major public concern forcing government to initiate regulatory action on petro-chemical and other industrial organisations. This in turn is causing organisations to take a relook at their technologies, modify and evolve new structures. The internal environment include aspects of organisation culture and climate as indicated by the internal arrangement of departments, patterns of authority, coordination and control, reward systems, opportunities for development, grievance redressal, etc. If internal environment climate builds employees into a cohesive and motivated team, they may be able to develop some resistance or immunity from external environment, at least for a while to impart some cushion for the organisation to ward off pressures in times of turbulence and uncertainty. Therefore, for purposes of organisation design strategies, the following five could be considered as critical dimensions of organisation design:

1 Environment

To begin with, we may consider the broad features of environment such as whether it is relatively stable or not, the rate of change (if any), and the degree of complexity. These aspects are considered to affect the organisation and therefore the design strategy should permit an appropriate fit between the structure of an organisation and its external environment.

2 Technology

The choice of technology influences how well an organisation can maximise its effectiveness. The basic structure of an organisation should facilitate a technology appropriate to a chosen strategy. Thus there should be a fit between strategies concerning structure and those of environment and technology.

3 Size

The structure of an organisation is, in some ways, a function of size. With increase in size, complexity increases in an organisation and the movement from centralisation to decentralisation takes a full circle with centralised decentralisation for purposes of optimally designed control and coordination.

4 Ownership

In the past it is believed that the organisational purposes vary with the nature of ownership. But such distinctions are less pronounced these days than before. The organisation structures need not vary based on ownership, more so in form than in substance.

5 Social change and Human aspects

Though last mentioned, of all the five aspects, this is the most influential factor shaping and reshaping the organisation structures warranting, as indicated by the growing body of knowledge on human behaviour, a movement away from traditional control systems to systems based on consensus and commitment. In what follows, these five aspects are briefly discussed with a view to discerning their possible impact on organisation design.

3.2 ENVIRONMENT

Organisations are not islands in themselves. Being part of society they are affected by the external environment; and they also affect the environment. Not all aspects of environment may be subject to organisational control. But, all affect design. The complexity of organisations has been increasing, over the years, partly in view of increase in size of operations, expansion and diversification programmes, etc., and largely in view of technological changes, competitive pressures, state intervention, internationalisation of operations or organisational contexts. It is important to note that simultaneously conflicting pressures are building up towards the organisational environment of the future, some thrusting towards changes, others impeding it (Table.1). The pressures for change suggest lose, open, fluid organisations, receptive to the need for change, risk and complexity. This can be accomplished only when the organisation members at all levels are highly involved, and committed. Ironically, however, the pressures for stability tend to increase control and reduction of individual autonomy. This leads to alienation of the members from the organisation.

To comprehend the complexity of organisational environment and cope with it proactively, general descriptions of typology of organisations have been attempted by some writers on organisations. Notable among them include Thompson and Lawrence and Lorsch. (Table 2). Both the authors discuss the problems of differentiation and adaptation and directly relate them to organisational components having different kinds of environments. Taking cue from these authors and revising the typology of Emery and Trist[1], Ray Jurkovich suggests a core typology of organisational environments (Fig. I).

[1] 1 F.E.Emery and E.L.Trist 1965. The Casual Texture of Organisational Environments, *Human Relations*, 18, pp.21-32.

Table 1 : Factors Fostering and Impeding Change

Toward Change	Toward Stability
Growing environmental complexity and economic uncertainty	Increasing competition
New technology enhancing flexibility	Increasing emphasis on efficiency, cost control, and productivity
Growing science base for virtually all manufacturing	Success of older forms in the past
Changed social values	Sense of threat
Example of successful firms with nontraditional, nonbureaucratic structures and processes	Managers' tendency to see the future as "more of the same" just like the past

Source: M. Jelinek, J.A. Litterer and R.E. Miles, 1986, *Organisations by Design, Texas, Business Publications P. 528.*

Activity A

Using the typology given in Table 1, identify the specific factors fostering and hindering change in your organisation, with appropriate illustrations:

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Table 2 : Some Typologies of Organisation Environment

Thompson	Lawrence and Lorsch
1. Homogeneous-stable	1. Low diversity and not dynamic
2. Homogeneous-shifting	2. Low diversity and highly dynamic
3. Heterogeneous-stable	3. High diversity and not dynamic
4. Heterogeneous-shifting	4. High diversity and dynamic

Sources : As quoted by Ray Jurkovich, 1974. A Core Typology of Organisational Environments, *Administrative Science quarterly*. Sept. 1974.

Figure I : A Core Typology of Organisational Environments

Movement		General characteristics															
		Non Complex								Complex							
		Routine				Nonroutine				Routine				Nonroutine			
		Organized		Unorganized		Organized		Unorganized		Organized		Unorganized		Organized		Unorganized	
		D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I
Low change rate	Stable	1	2	3													16
	Unstable	17	18														32
High change rate	Stable	33															48
	Unstable	49															64

D = Direct I = Indirect

Source: Ray Jurkovich, *Op. cit.*

For instance, he includes homogeneity and heterogeneity in the complexity continuum, incorporates change rate continuum, and comes up with 64 combinations (types). The broad propositions he makes to sum up the extreme types of organisational environments are as following:

1 Organisations with type 1 environment have relatively minor information problems; can design long-range strategies, operations, and tactics more easily – more rapidly and in more detail – and implement them without major alterations; have relatively little internal conflict potential; possess a more mechanical structure; have clearly defined and predictable, gradually changing coalitions; and have relatively few problems with their existing decision-making programmes when the environment changes.

2 Organisations confronted with a type 49 environment experience the same problems as do those with a type 1 environment; but they experience a higher degree of uncertainty concerning timing in the control of internal problem states.

3 Organisations confronted with a type 64 environment have major information problems; have very abstract, tentative sets of strategies, operations and tactics and cannot execute them without expecting major alterations; have very vague coalitions that change unpredictably; and are constantly redesigning decision-making programmes or constantly making exceptions to existing decision-making programmes.

4 Organisations confronted with a type 16 environment have the same problems as are experienced by organisations with a type 64 environment, but they are able to predict and control internal problem states much more easily.

This typology is not a matrix of inerdependencies; each cell represents a different situation. Knowing the environmental map or the direction of its movement may mean switching from one type to another.

3.3 TECHNOLOGY

Technological change, more than that the pace of technological change, is a factor affecting organisations in more ways than one. The changes in technology are leading not only to the new products and processes but also change the requirements of raw materials, human skills, etc. Control of operations has been assisted by advances in sensors and the widespread application of computers to manufacturing process studies. New materials, for example, plastics replacing stainless steel and synthetic fibre replacing jute, are offering new vistas and opportunities to face the emerging global competition. The computer-aided manufacturing and design have led to many aspects of work inter-action among people. New technologies call for new structures to foster change and growth. The changes in information and technologies are rapidly changing and in many cases making redundant the role of managers at middle levels. The prospects and consequences of technology on organisations are very hard to imagine as of date because what we know about the true potential of technology is very little in relation to what we do not know yet.

While technological changes affect organisation design choice and strategy and vice-versa, the options depend on a number of constraints and possibilities that the choices create. Sometimes what happens in other organisations in the same sphere of activity might force a kind of consensus on the appropriate technology strategy for the organisations.

When the problems of automation of machine could be handled but not that of automation in the minds of men so easily, invention and use of robots at workplace is being encouraged to overcome human and behavioural related problems and costs and achieve productivity and effectiveness. But since such options may lead to jobless growth, they will be opposed and resisted in developing countries like ours concerned with the problem of creating gainful employment opportunities for our teeming millions of unemployed.

Even in the western, developed countries, there is a growing realisaton to modify the structures to suit the new technologies and the aspirations of the new brand of educated, skilled people who handle such technologies. The Japanese experience

has increasesd the awareness and conviction about the desirability and feasibility of obtaining a fit between technology and people through, among others, modifications in organisation design. For instance, in the West, starting with Joan Woodward's work in the late 60's, it has been shown that highly automated technology, such as the continuous processing of oil refineries, paper and pulp mills, and food processing, functions best with a minimum of hierarchy and a maximum of teamwork at the lowest levels: Participation must include authority to decide and act. Unless those closest to the technology have training and authority to recognise problems and act quickly, mishaps can destroy costly equipment. In the 70's Japanese companies were able to produce cars and electronics products of higher quality than the U.S., using similar production technology but more participative management. Japanese wages were somewhat lower then, but this did not explain the higher quality and more effective use of resources[1]

Activity B

Visit an organisation which introduced new technology (Computers in a bank, containerisation in a port, integrated process control in an industry ....). See how it changed work, work group relationships and organisation structures. Examine the kind of problem/issues the organisation had to face and how it tackled particularly from 'organisation design' point of view.

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[1] This section is adapted from
Michael Maccoby, 1981. The Leader, A New Face for American Management, Simon and Schuster, New York..

3.4 SIZE

Organisations could be small or large. The continuum of scale (or size) could be widened if we want to focus on smallest of the small (tiny) or organisations in intermediate range between small and large (eg. medium). Usually a threefold criteria is established to determine size, each independently or jointly: (a) number of persons employed; (b) amount of capital invested; and, (c) volume of turnover. The features that distinguish small organisations from large organisations could be listed as follows in Table 3:

Table 3

Small	Large
1. Fewer employees	More employees
2. Less capital	More capital
3. Limited turnover	Huge turnover
4. Simple operations	Complexities in operations
5. Flexible	Less flexible
6. Less regulation from government	More regulation from government
7. Less bureaucratic	More bureaucratic
8. Better control and coordination	Complexities in coordination and control
9. Relatively flat	Hierarchical
10. Personal	Impersonal
11. Less overheads	More overheads
12. No economies of scale	Greater economies of scale
13. Limited options for profit maximisation	More options for profit maximisation

14.	Less impact on community	More impact on community
15.	Less need and scope for social responsibilities	Greater need and scope for social responsibilities

Notwithstanding the distinctions shown in Table above, an organisation with large investment need not necessarily employ large numbers or have huge turnover than the one with relatively small investment. The relationship between one variable and the other(s) is a function of the nature of market, technology, etc. The problems of design of organisations are more complex in large organisations than in small ones. A discussion on the relationship between small and large organisations in terms of competition (small versus large) and cooperation (ancillary-subcontracting and parent relationships) is outside the purview of this course. Suffice it to note that, small organisations, when they are effective and growing, graduate into becoming large organisations. Not all features that change as size increases are positive just as the features that characterised a small firm are a mixed bag. For instance, with increase in size, an organisation may be able to reap the advantages of economies of scale, but its overheads also may grow in a manner that might offset the advantages of economies of scale. As organisations become large, experience shows that they have to face more intervention and regulation of their activities from government, unions, etc. A large organisation in a small place will have a greater impact on the community than a small organisation. Therefore, the need and scope for organisations to discharge social obligations also seem to have a tendency to grow in proportion to their size.

3.5 OWNERSHIP

Organisations are often sought to be classified sectorally based on 'ownership' criterion. It is further believed that the nature of ownership influences the aims of an organisation, nature of control and attitudes to market situation. One such typology suggested by George Davidovic is mentioned hereunder as an illustration (Table 4).

Table 4 : Selected Features of Different Sectors

Features	Private Sector	Public Sector	Cooperative Sector
Ownership	Private	Public	Social, based on membership
Aim	Profit motive	Serving State ends	Service to members without profit
Control	On the basis of ownership rights	By State Officials State appointees	Member-users
Attitude to the market	Tendency to Competition	Tendency to Monopoly	Tendency to Coordination

Source : George Davidovic, Reformulation of the Cooperative Principles, Cooperative Union of Canada, 1966, p. 3.

In reality, however, the private enterprises have larger public holding and public sector has an element of mixed or joint ownership and enterprise. The rise of modern corporation led to certain degree of divorce between ownership and control. The public sector is compelled not to ignore the profit motive altogether while the private sector is under great pressure and obligation to keep public good in mind and discharge its social objectives. Protection and monopoly are transient phases in most economic systems and there is neither pure capitalism nor pure communism anywhere. Therefore notions concerning distinctive nature of organisations in different sectors have to be modified keeping in mind the changes in the environment of particular economic systems at different points of time. The elements and characteristics of organisation, particularly when they are seen in action, do not any longer have universal distinctiveness merely on the basis of ownership criterion.

Activity C

Visit one private and one public sector organisation. Examine whether there are any perceptible differences between organisation structures (number of levels and spans of control) and processes (particularly in reference to flow of authority and communication) in a private and public organisation. Briefly comment.

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3.6 SOCIAL CHANGE AND HUMAN ASPECTS

A number of basic socio-cultural conditions impinge on organisations and their functions. There is a view that in numerous cases socio-cultural constraints have tended to be the chief cause of under development and poverty in developing societies like India. It is indeed difficult to measure and quantify whether and how these factors affect organisation and management systems. A certain sense of fatalism, limited aspirations and assigning a low value to time are cited as some of the characteristics of traditional societies like ours. In Hindi the words 'tomorrow' and 'yesterday' are identical, only distinguished by usage. Both mean one day from now. As the noted social anthropologist Margaret Mead pointed out in her study on Spanish Americans, in traditional societies there is a stiff resistence to change as based on the belief that "it has been so all along and it continues to be so".

Group membership shapes the aspirations and desires of a great majority of the people. The joint or extended family consisting of a number of family units—father, mother, sons and their wives, children, nephews and their families living together in one roof pooling and sharing resources. Usually the eldest male member wields authority and control over the members and resources. Over the years caste related mores and taboos are gradually changing and the joint family system is undergoing an erosion. While in the past authority and dependence was a part of family and cast structure, progressive strides in urbanisation and modernisation have changed the system. Parochial considerations, inter-laced with religion, language and region have had adverse effects on group cohesiveness, cooperation and productivity even in organisational context. Notwithstanding the many changes in the society the dependency among masses continues. There is a tendency to show loyalty to individuals than institutions and excell in individual tasks than group performance. Occupational values discount physical labour and place a premium on civil service and professional skill.

In juxtaposition, the old nexus between one's caste and occupation seems to be gradually waning. Over the years the profile of people in organisations has been changing in terms of literacy and technical inputs. Alongside, we discern increase in social mobility, raise in expectations etc. The old social patterns are breaking down, changes in technology are reducing the gap between the blue collared and white collared occupations. The evolving social and political climate gave rise to new and higher expectations. Constitutional rights, questions of equity, job stability, higher safety standards and workplace democracy are sought and got more today than before. Political responsiveness to issues of social justice, consumer pressures, pollution control and other non-economic issues are placing new demands on organisations affecting their structures and processes. These multiple demands stretch far beyond traditional economic concerns and increase the uncertainty in organisational involvement. The turbulant and uncertain environments require less vertical organisational authority. Patterns providing for decentralised decision making, new patterns or organisations for ensuring democracy at workplace have already begun to emerge in the form of quality

circles, quality of work life programmes, etc. Issues on occupational safety and health are causing managements to release more information and seek better cooperation. Each of the changes seem to make inroads into managerial authority through higher doses of Government intervention and regulations and collective bargaining with the trade unions. Even in the traditional union-management bargaining structures changes are visible. Both the parties are compelled to shed their traditional, adversarial role and look for new forms of labour management cooperation to ease the problems of rapid technological changes and growing competitiveness and other pressures on organisations.

As a result of changes of the type described above, the traditional, control oriented approach, to human resource management which took shape during the early part of this century was based in response to the division of work hierarchy and top down allocation of authority with the status attached to positions in the hierarchy. This did not provide much for upward communication or freedom of action at workplace. Also, control strategies dampen individual initiative and motivation. Over the years, the changes in the composition and profile of work force have been accompanied by changes in their expectations and attitudes which prompted certain resentment with traditional control systems.

Simultaneously, the revolutionary changes in the wake of rapid advances in technologies and growing competition on global basis made it imperative to restructure organisations accommodating the need to generate commitment based on consensus to achieve superior levels of performance. Jobs are being re-designed more broadly than before combining planning with implementation, reduction in hierarchical levels and emphasising lateral coordination based on shared goals and expertise rather than influence linked with formal positions. The aspects of traditional control strategies and the direction of their change as transition occurs to strategies based on commitment and control have been listed in Table 5. While such transition gave way to the evolution of several new approaches and techniques in organisation and management systems like job enrichment sensitivity training, management by objectives, quality circles, etc. mere coordination did not prove to be of lasting value if the underlying philosophical change did not occur in management style and practice. In today's context and while reckoning the future of organisations, such transition in management style is considered not merely an economic necessity but an imperative guided by the need to change a host of policies and practices shaping and expediting its pace.

Table 5 : Work Force Strategies

	Control	Transitional	Commitment
Job design principles	Individual attention limited to performing individual job.	Scope of individual responsibility extended to upgrading system performance, via participative problem-solving groups in QWL, EI, and quality circle programs.	Individual responsibility extended to upgrading system performance.
	Job design deskills and fragments work and separates doing and thinking.	No change in traditional job design or accountability.	Job design enhances content of work, emphasises whole task, and combines doing and thinking.
	Accountability focused on Individual.		Frequent use of teams as basic accountable unit.
	Fixed job definition.		Flexible definition of duties, contingent on changing conditions.
Performance expectations	Measured standards define minimum performance. Stability seen as desirable.		Emphasis placed on higher; "stretch objectives," which tend to be dynamic and oriented to the marketplace.
Management organisation : structure, systems, and style	Structure tends to be layered, with top-down controls.	No basic changes in approaches to structure, control, or authority.	Flat organisation structure with mutual influence systems.

	Control	Transitional	Commitment
	Coordination and control rely on rules and procedures.		Coordination and control based more on shared goals, values, and traditions.
	More emphasis on prerogatives and positional authority.		Management emphasis on problem solving and relevant information and expertise.
	Status symbols distributed to reinforce hierarchy.	A few visible symbols change.	Minimum status differentials to de-emphasize inherent hierarchy.
Compensation policies	Variable pay where feasible to provide individual incentive.	Typically no basic changes in compensation concepts.	Variable rewards to create equity and to reinforce group achievements: gain sharing, profit sharing.
	Individual pay geared to job evaluation.		Individual pay linked to skills and mastery.
	In downturn, cuts concentrated on hourly payroll.	Equality of sacrifice among employee groups.	Equality of sacrifice.
Employment assurances	Employees regarded as variable costs.	Assurances that participation will not result in loss of job.	Assurances that participation will not result in loss of job.
		Extra effort to avoid layoffs.	High commitment to avoid or assist in reemployment.
			Priority for training and retaining existing work force.
Employee voice policies	Employee input allowed on relatively narrow agenda. Attendant risks emphasised. Methods include open-door policy, attitude surveys, grievance procedures, and collective bargaining in some organisations.	Addition of limited, ad hoc consultation mechanisms. No change in corporate governance.	Employee participation encouraged on wide range of issues. Attendant benefits emphasised. New concepts of corporate governance.
	Business information distributed on strictly defined "need to know" basis.	Additional sharing of information.	Business data shared widely.
Labor-management relations	Adversarial labor relations; emphasis on interest conflict.	Thawing of adversarial attiudes; joint sponsorship of QWL or EI; emphasis on common fate.	Mutuality in labor relations; joint planning and problem solving on expanded agenda.
			Unions, management, and workers redefine their respective roles.

Source : Richard E. Walton, 1985. From control, to commitment in the work place, *Harvard Business Review*, March-April 1985.

Activity D

Examine the kind of work force strategies being used in your organisation within the framework of the typology presented in Table 5. Discuss how you perceive the influence of these strategies, what changes you would see occuring in your organisation and why?

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3.7 SUMMARY

We considered five critical dimensions of organisational design. They are: Environment, Technology, Size, Ownership and Social Change and Human Aspects. Environment, technology and people are observed to be closely interrelated and the strategic choices concerning structure should seek to strike a balance with these three aspects. Increase in uncertainty, rapid pace in technological change and aspects of social change seem to make similar demands on structural options and warrant a movement away from traditional control systems to those based on consensus and control. The implications of increase in size of operations also point to the need for democratisation. Ownership as a criterion is found to be of less relevance, particularly in form, than in substance.

3.8 SELF–ASSESSMENT TEST

1 Discuss the changing nature of organisational and the implications for organisational design.

2 Review the effects of environment and technology on organisation.

3 Comment on the future of organisation design.

3.9 FURTHER READINGS

John Child, 1984. Organisation : *A Guide to Problems and Practice,* London, Harper & Row.

Marriam Jelinek, Joseph A Litterer and Raymond E Miles, 1986. *Organisations by Design,* Texas, Business Publications.

Jay M Shafritz and J Steven Ott, 1987. *Classics of Organisation Theory,* The Dorsey Press, Chicago.

Rosemary Stewart, 1970. *The Reality of Organisations,* Pan Books, London.

UNIT 4 SOME BASIC ORGANISATION DESIGN AND RESTRUCTURING STRATEGIES

Objectives

After reading this unit you should be able to understand:

- basic parts of the structure of an organisation;
- the relationship between strategy and structure and
- structural concomitants of organisation change and development.

Structure

4.1 INTRODUCTION

Organisations develop over a period. They cannot stand still even if they seek to maintain status quo. Their key problem concerns what constitutes an appropriate strategy and a supportive structure.

Whatever be the strategy and structure, every organisation has certain basic parts made up of people who perform, supervise and plan besides those who render support services and technical advice. The building of the initial structure of an organisation could be based on societal conditions and industry characteristics prevailing at that time and the personality of the founder (entrepreneur). In some sectors such as agriculture and retail trade, for instance, one still finds use of unpaid family labour. But modern industries/institutions have increasingly tended towards bureaucratic structures which themselves are getting modified with the passage of time and changes in environment, size, technology and population. New organisation structures are created either by existing organisations or by individuals who create new organisations. Experience shows that personal vision, beliefs and preferences of entrepreneurs on matters such as delegation determine the shape of an organisation at the time of its foundation and also over time. The shape changes depending on the nature of issues in integration and control. Ageing and growth lead to complexity and uncertainty and turbulence in environment (including technology) and provide impetus to reshape or restructure organisations. Discovery of doing things in a better way or dissatisfaction with the existing structure may provide occasions and opportunity to come up with new strategies and structures. Organisations of the future are likely to emphasise on innovation. As such, the design components of an innovative organisation also merit consideration here.

4.2 THE FIVE BASIC PARTS OF AN ORGANISATION

In the simplest organisation say, a 'pan shop', the operator, i.e. the 'pan wala' is largely self-sufficient and does all aspects of work by himself. He is the entrepreneur, manager and labourer. As his business grows, he might appoint one or two persons

to assist him. The organisation relies on mutual adjustment to coordinate the work With further growth, in this or any other organisation, more labour is engaged and work is divided among the labour or 'operators' who do the basic work. Then the need for direct supervision will be felt. We thus have two sets of labour in the structure: those who do the work (operators) and those who supervise (manager) it. And, as the organisation develops further, more supervisors or managers are added – not only those to supervise labour, but also those to supervise the supervisors, etc An administrative hierarchy is thus built.

When the organisation grows in size and number of levels, it seeks to standardise the work of labour and supervision. The responsibility for much of this standardisation falls on a third group, who may be referred to as analysts. Some, such as work study analysts and industrial engineers have responsibility to standardise work processes while others, such as quality control engineers and accountants, planners, seek to standardise outputs. A third set of specialists like personnel trainers seek to standardise skills. The introduction of analysts brings a second kind of administrative division of labour to the organisation, between those who do and who supervise the work, and those who standardise it. Whereas in first case managers assumed responsibility from the operators for some of the coordination of their work by substituting direct supervision for mutual adjustment, the analysts assume responsibility from the managers (and the operators) by substituting standardisation for direct supervision (and mutual adjustment). Earlier, some of the control over work was removed from the manager as well, as the systems designed by the analysts take increasing responsibility for coordination. The analyst "institutionalises" the manager's job.

Stagewise Development

The process of organisation design is a dynamic one, yet most of the models and concepts are static. Some of the limitations of a static model can be overcome by focussing on the stagewise process of the development of organisations and the management of transitions from one stage to another.

Galbraith (1982) studied a number of high technology start – ups and found that all went through five identifiable stages: Proof of principal photo type, Model shop, start up volume production, Natural growth and stage maneuvering. These ventures characteristically begin as small, homogeneous, innovative garage–shop organisations. At this stage a formal structure would inhibit progress. Later, significant capital is invested, and the transition is made to an operating organisation. Now structure is necessary for progress. For each of these stages, there is a different task and hence a different fit between all the organisational elements.

The stage-wise process has been described as consisting of stages of evolution, each followed by a revolution and then a new stage, e.g., almost down-stream companies start as a single product, functional organisations and later become multiproduct profit centres. This change need not be revolutionary. The disruption can be minimised through organisation design. This is described below. As the number of products increases, cross-functional teams can be used to start the process of decentralisation and the creation of general managers. Information systems can be established to support the teams.

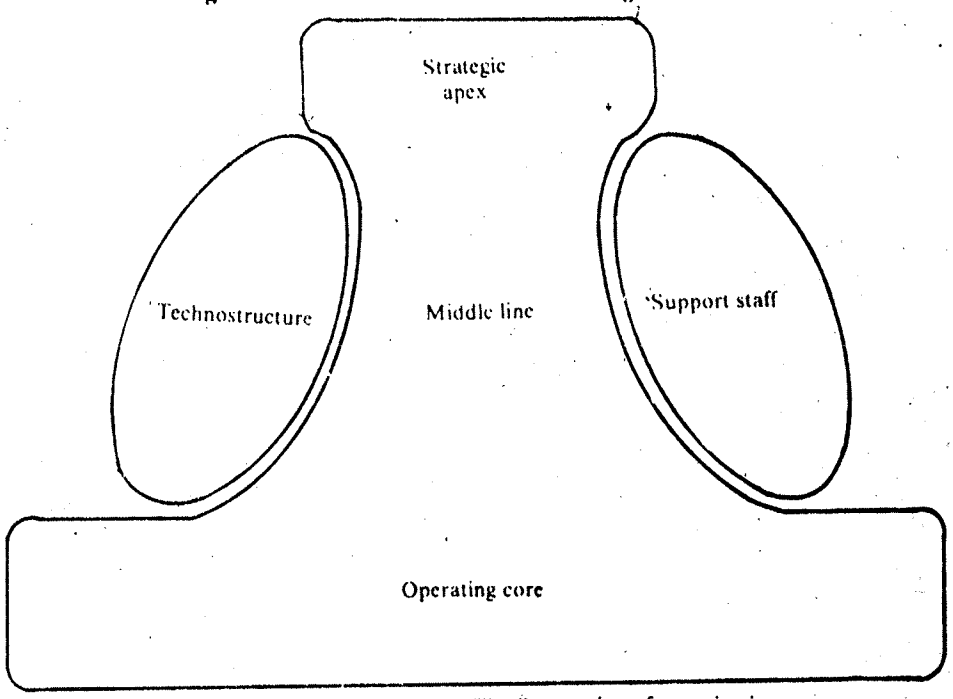
Product managers can be the next step. Teams led by product managers can create business plans used in the budgeting process. Next the assembly department and engineering can be reorganised around products as volume builds. In this manner, the organisation can move step by step over three to five years into the profit-centre form.

Developing this analysis further, Mintzberg conceptually describes an organisation as typically having five basic parts as shown in Fig. I.

The three parts of the organisation (i.e. the strategic apex, middle line and the operating core) are shown in a sequence indicating a single line of hierarchical authority. This refers to the functional authority structure of the line managers in the literature on managment (and organisation) the technostructure and support staff shown to the left and right respectively of middle line. Mintzberg defines the concept of "staff" and makes a distinction between technostructure and support staff. The support staff do not primarily

advise, but have distinct functions to perform and decision to make. This becomes obvious when we consider the activities in cafeteria, public relations or preparation. The technostructure's advisory role tantamounts, at times, to the power to decide; but only power is outside the flow of formal line authority that oversees the operating core. Now let us briefly examine each of the few basic parts.

Figure 1 : The Five Basic Parts of Organizations



Source : Henry Mintzberg, 1979. The Structuring of organizations, Englewood cliffs, New jersey, Prentice - Hall.

* Adapted from Henry Mintzberg, 1979. The Structuring of Organisations, New Jersey, Prentice-Hall (Mintzberg is one of the recent writers on organisation structures and the nature of managerial work. The ideas discussed in this section are based on his work).

The **Operating core** consists of those who perform the basic work relating to production or services. They secure inputs for production (eg. purchase of materials), transform inputs into outputs (eg. converting pulp into paper), distribute the outputs or provide direct services (eg. maintenance). Since other parts of the organisation are meant to protect the operating core, standardisation is generally attempted first at this level. But, how far this is possible depends on the nature of work: assemblers in automobile factories and professors in universities are both operators; yet the work of the former is far more standardised than that of the latter.

The operating core is at the heart of every organisation. But except in very small ones, organisations need to develop administrative components comprising the strategic apex, middle line and technostructure.

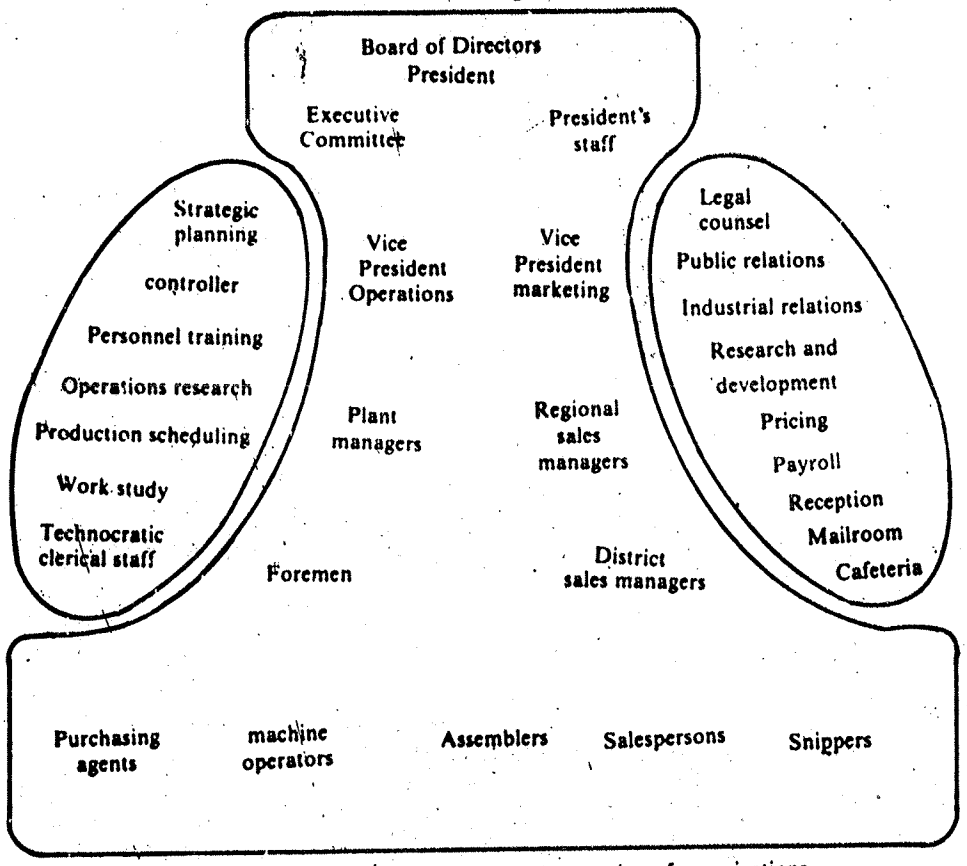
The **Strategic Apex** comprise people with overall responsibility for the organisation, i.e. the board, chief executive and other top-level managers. They have the responsibility to set goals, prepare plans and develop strategies to implement plans and accomplish goals. They have to manage the relationship with environment. They also have to oversee the operations and provide direction and control. Work at this level is more abstract and conceptual and involves less of routine to permit any standardisation. Mutual adjustment is the favoured mechanism for coordination among the managers of the strategic apex.

The **middle line** is the linking pin between the strategic apex and the operating core. The chain runs from senior managers down to the first-line supervisors. The chain of authority could be scalar (single line from top to bottom or matrix with some subordinates having to report to more than one superior).

An organisational-hierarchy is built and a first-line supervisor is put in charge of a number of operators to form a basic organisational unit, another manager is put in charge of a number of these units to form a higher level unit, and so on until all the remaining units can come under a single manager at the strategic apex (chief executive) to form the whole organisation.

The most dramatic growth in recent years had been in the staff groups, both technostructure and support staff, leading to great bulges at middle level in many organisations. A typical list of positions in each is shown in Fig. II.

Figure II : Some Members and Units of the Parts of the Manufacturing Firm



Source : Henry Mintzberg, 1979. The Structuring of organizations, Englewood cliffs, New jersey, Prentice - Hall.

The middle line assigns work down the hierarchy and obtains and gives feedback on performance of concerned units reporting to a manager at each level. The middle level also performs a number of activities to follow-up and implement decisions made at top level and liaises and maintains relations with individuals/groups that interface with his unit/department. In a way, a middle level manager has to function like a chief executive in managing his own unit. The nature of job, however, changes as the middle line descends in the chain of authority. The job becomes more detailed and elaborated, less abstract and aggregated, more focused on the work flow itself.

The **technostructure** is made up of analysts whose job it is to control, stabilise and standardise patterns of activity in the organisation. In a fully developed organisation, the technostructure is at work at all levels of the hierarchy. At the lowest levels of the manufacturing, analysts standardise the operating work flow in scheduling production, carrying out time-and-method studies, and in studying systems of quality control. At middle levels, they seek to standardise intellectual work (e.g. training, research studies on operations, attitudes, etc). At the strategic apex level, they aid top management in designing strategic planning and control systems.

Support staff are engaged in large organisations to encompass more and more boundary activities (such as running industrial canteen or hospital) in order to reduce uncertainty, to control its own affairs. The support units also can be found at various levels of hierarchy. For example, legal counsel and public relations support at apex level and research and development units etc. support decisions at middle level.

Design Parameters

To make the organisations establish firm patterns of behaviour, organisations use formal and semiformal methods, called design parameters, to differentiate and coordinate work activities. The choice and configuration of design parameters determine the structure of the organisation.

The 'design of positions' is the first category of decisions concerning the organisation structure. Job positions are designed by 'job specialisation', 'behaviour formalisation', and 'training' and 'indoctrination'.

'Job specialisation' reflects the division of labour (the number of tasks assigned to a worker) and the worker's control over the assigned tasks.

The other way of designing positions is through 'behaviour formalisation'. Behaviour is regulated by the standardisation of work content. This regulation will result in formalisation of the job, formalisation of the work flow or formalisation by rules and regulations.

Bureaucratic organisations rely primarily on standardisation. Organic organisations have little standardisation. Behaviour formalisation is most common in the operating core, making it bureaucratic. The strategic apex tends to have an organic structure. As work progresses down the hierarchy, it usually becomes more formalised. Organisations use behaviour formalisation to reduce variability performance.

Another method of designing positions is through 'training and indoctrination'. Training is a major design parameter for the operating core, the technostructure, and for staff units. Indoctrination is the major approach at the strategic apex and middle line portions of the organisation.

The second type of design parameters is the 'design of the superstructure', Unit grouping and Unit size are included in this category.

'Unit grouping' is the basic means of clustering positions to coordinate work. It establishes a system of common supervision among positions and units, requires the sharing of common resources, creates common measures of performance and encourages mutual adjustment.

Units can be grouped on the bases of knowledge, output, client and work process, but the fundamental grouping bases are function and product. Functional grouping is concerned with the work process and scale interdependencies. 'Unit grouping' by product is more flexible, less bureaucratic, has fewer economies of scales and is less efficient. Functional grouping is more common at the lower levels of the organisation, particularly in the operating core, while unit grouping by product occurs more often at higher levels.

Another way of structuring the entire organisation is the 'unit size', or the number of positions contained in a single unit. In general, the larger the unit size the greater the use of standardisation for coordination. The greater the reliance on mutual adjustment as a coordinating mechanism, the smaller the size of the work unit.

The redesign of the superstructure is possible by two ways. First, if the organisation's goals and missions change, structural redesign is initiated from the top downward. Second, if the technical system of the operating core changes, the redesign proceeds from the bottom up.

The third design parameter is the 'design of lateral linkages'. This is possible by 'planning and control systems' and 'liaision devices'.

The purpose of 'planning and control systems' is to standardize outputs. Action planning specifies the desired results of specific activities. Action planning occurs before the activity is undertaken. Work-flow interdependencies often require action planning.

Another way to design lateral linkages is 'liaison devices'. For e.g.; the design engineer who moves between te development lab and the preproduction engineering group.

Liaison devices encourage, informality and more liaison devices, the smaller the unit. When work is horizontally specialised, complex and highly interdependent, liaison devices are necessary. They are well suited for work at the middle levels of the organisation.

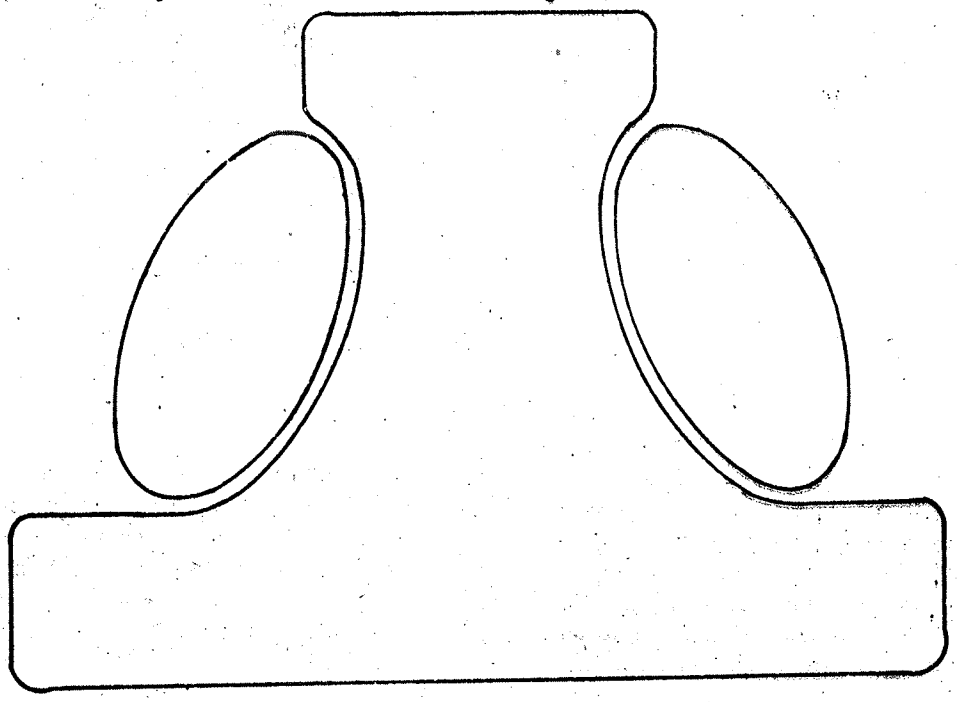
The 'design of the decision making system' or vertical and horizontal decentralisation is the last category of design parameters. Centralised system gives the decision making power to one or a few persons near the top of the organisation. Decentralisation desperses authority to make decisions among many organisation members at lower levels.

Centralisation may be related to other design parameters. Behaviour formalisation often exists when there is centralisation. Training and indoctrination lead to decentralisation. Liaison devices are used in decentralised organisations; planning and control systems are preferred in centralised organisations.

Mintzberg hypothesises that "effective structuring requires a consistency among the design parameters and contingency factors". The design contingency factors are age, size of the organisation, the technical production system, environment and the organisation's power system.

Activity A

Fill the five basic parts in Fig.1 with the typical job titles in your organisation.



Activity B

Examine the interrelationship between and among the five parts described above. Study the functions/activities which people in various positions in each part perform. Consider whether any of them are becoming/made redundant and if so, why?

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4.3 STRATEGY AND STRUCTURE

Alfred Chandler observes that structure follows strategy. He defines strategy as the determination of the basic long term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out the goals. Structure is defined as the design of organisation through which the enterprise is established. The design has two aspects viz., the line of authority and the flow of communication.

Expansion of volume, geographical dispension, vertical integration, product diversification, etc. add to the research and activities, and increase complexities requiring new structures. Changes in strategy are often called in response to emerging opportunities and problems, also changes in people, technology and environment. Though structure follows strategy, often there are problems and delays in developing new organisation structure to meet new strategies.

Preoccupation with present routine or perceived threat to power and position and resulting insecurity may lead to a situation where managers may try to continue with old structures even after a change in strategy.

Alfred Chandler notes that a new strategy requires a new or at least refashioned structure if the enlarged enterprise has to be operated efficiently. The failure to develop a new internal structure, like the failure to respond to new external opportunities and needs, may be a consequence of over- concentration on operational activities by the executives responsible for the destiny of their enterprises, or from their inability, because of past training and education and present position, to develop an entrepreneurial outlook.

One important corollary to this proposition is that growth without structural adjustment can lead only to economic inefficiency. Unless new structures are developed to meet new administrative needs which result from an expansion of a firm's activities into new areas, functions, or product lines, the technological, financial, and personnel economies of growth and size cannot be realized. Nor can the enlarged resources be employed as profitably as they otherwise might be. Without administrative offices and structure, the individual units within the enterprise (the field units, the departments, and the divisions) could undoubtedly operate as efficiently or even more so (in terms of cost per unit and volume of output per worker) as independent units than if they were part of a larger enterprise. Whenever the executives responsible for the firm fail to create the offices and structure necessary to bring together effectively the several administrative offices into a unified whole, they fail to carry out one of their basic roles.

Chandler's analysis focusses on four American "giants", General Motors, Sears, Du Pont and Standard Oil of New Jersey during the early part of the 20th century. Prior to the 1920's, these firms tended to operate with a tightly centralised structure composed of departments arranged along functional lines; that is, seperate groups concerned with manufacturing, sales, finance, and so on for the total corporation. Each firm sought to diversify for different reasons. General Motors sought to blanket the entire automobile market with the various lines it had acquired. Sears wanted to become a nationwide operator of retail establishments as well as a nationwide catalogue distributor. Du Pont wanted to diversify its product line into a broad range of chemical products so that it would be less dependent on military and government contracts. Standard Oil wanted to both expand its operations geographically and extend its product lines.

As Chandler's history demonstrates, not only did each of these organisations choose to pursue a related market strategy, but each of them also found its chosen strategy constrained by its existing structure and processes. New products and new areas of operation tended to overload centralised decision-making systems and to confound coordination mechanisms among the large, specialised departments. The new divisionalised structure, which focused coordinated resources on a given product or region, emerged over time in each firm as a response to existing system failures, but the process was slow (taking over 10 years in Sears) and frequently costly.

Power and Politics may play a crucial role during a period of strategic change. Resources, succession routes, and dominant functions are all up for grabs at such a time. For this reason, active management is important to ensure a smooth transition.

Thompson finds that there is inherent conflict between the "closed system" and "open system" models and their apparent limitations in application. He finds that closed system does not accommodate environmental influences and open-system overemphasises adaptablity to the neglect of more controllable elements.

Thompson seeks some means of building upon these concepts while holding rationality as a criteria. For instance, he finds that "if the closed-system aspects of organisations are seen most clearly at the technical level, and the open-system qualities appear most vividly at the institutional level, it would suggest that a significant function of the managerial level is to mediate between the two extremes and the emphasis they exhibit. He feels that the organisation will attempt to isolate its "technical core" as much as possible from the uncertainties generated by this interaction with the environment.

Uncertainties may arise from either the technology or the environment as there are

substantial numbers of variations observable in both categories. Organisations will also differ in their methods of coping with these different combinations. The three levels (technical, managerial and institutional) are interdependent, as such organisational differences in coping with uncertainty of various types will also create differences in these levels across organisations as efforts are made to reduce uncertainty.

Organisational rationality involves three major component activities: (i) input activities (ii) technological activities (iii) output activities. Since they are interdependent, organisational rationality requires that they be appropriately geared to one another. The inputs acquired must be within the scope of the technology, and it must be within the capacity of the organisation to dispose of the technological production.

Given this interdependence, it is obvious that the input and output activities require an open-system and do have effect on the closed-system logic of the technology. Because of this interdependence, the technological core of the closed-system cannot be completely sealed off. Therefore, organisations will seek to minimize the influences of the enviornment through such techniques as buffering, leveling, forecasting and rationing. The elements within the environment which influence on organisational action can be classified as "constraints" and "contingencies". Constraints are those fixed conditions which an organisation cannot control. Contingencies are those factors which may or may not vary but are not subject to the arbitrary control of the organisation. Organisational rationality is a combination of constraints, contingencies and the controllable variables.

Thompson states that each organisation will have a unique set of input and output relationships depending on the environment which it encounters and operates within. "Which individuals, which other organisations and which aggregates constitute the task environment for a particular organisation is determined by the requirements of the technology, the boundaries of the domain, and the composition of the larger enviornment".

In addition to dealing with contingencies through developing strategies for interaction with the elements of the task enviornment, Thompson argues that organisations may also be able to remove or reduce those contingencies through organisational design. Since the domain of an organisation is influenced by technology, the population being served and the services being rendered, a substantial change in organisational design would involve a modification might be achieved include vertical integration (especially with long linked technologies), increases in the size of the populations being served (as in mediating technologies), and incorporating the object or the client into the organisation (as in the case of intensive technologies). Not all of these alternatives are viable for an organisation at any one time since organisations may be constrained by capital requirements, the ability of the market to absorb additional production. Output, and/or legal restriction, to mention only a few. Thompson argues that the direction of growth will "not be random but will be guided by the nature of the technology and the task environment consequently, if organisations vary in design, they must also vary in structure.

The major components of a complex organisation are determined by the design of that organisation. Invariably these major components are further segmented, or departmentalised, and connections are established within and between departments.

Thus Thompson concludes that the fundamental problem faced by complex organisations is coping with uncertainty. Coping with uncertainty is therefore the essence of the administrative process. The sources of uncertainty for an organisation arise from three areas, two are external to the organisation and one is internal. "External uncertainties stems from (i) 'generalised uncertainty' or lack of cause/effect understanding of the culture at large, and (ii) contingency, in which the outcomes of organisation action are in part determined by the actions of elements of the enviornment". The third source of uncertainty is internal; the 'interdependence of components'. These uncertainties are resolved by solving the first type (generalised uncertainty), provides a pattern against which organisational action can be ordered. Solution of the second type (contingency) affords organisational freedom to so order the action against the pattern. Solution of the third (interdependence of components) results in the actual ordering of action to fit the pattern.

The Shape of the Organisation and the Design Process

We have considered earlier (Block-2, Unit-3) aspects relating to the shape of an organisation: tall (several levels and narrow spans) or flat (few levels and wide spans) design or function, product or matrix structures. The focus in organisation design is on the outcome, effect, or result of the design action. The design itself is influenced by a number of critical variables such as size, technology, environment, social changes, etc. The design process involves both science and art. The organisation design does not evolve purely by principles alone. The circumstances of the organisation and the whims and fancies of the entrepreneur (chief executive also influence the shape of an organisation). As in most other decision-areas in management here also, often there is a trade off between conflicting considerations and goals. Therefore, Herbert Simon suggests that as an alternative to the principles of design, we must attempt to understand the decision-making and communication processes which produce the effect. Human beings' potential for creative problem solving being varied and infinite, there is no finality about the appropriateness of a given structure for all time and all circumstances.

The starting point in setting the design process into action could be to follow the 7-step sequence suggested by Allen:

1 Identify the major objectives of the firm and derive the primary line functions needed to accomplish the objectives

2 Organise from the top down by establishing a scalar chain of authority and responsibility

3 Organise from the bottom up by integrating the activities of each function

4 Decide what management positions are needed for each activity

5 Identify positions in group related work

6 Check groupings to ensure balance in the distribution of resources

7 Check whether spans of control are appropriate

Peter Drucker provides fresh perspective and comes out with a four step sequence on following:

1 Determine desired results

2 Determine key result areas

3 Determine when activities could be integrated and when should be kept separate

4 Assign appropriate coordinative responsibility and authority

Organisation design thus requires that careful attention be given to three levels of problems and issues:

1 Mission should be consistent with environment

2 Structure and process should be consistent with Mission

3 Individual problem solving should facilitate structure and process.

Restructuring Strategies

Organisation design forms a key element of organisation development when an organisation takes into account the structural concomitants of changes in the text and context of an organisation. An organisation must seek to retain the advantages of small organisation even when it grows in size and complexity. The design objective is disaggregation of a total organisation within the framework of the need and possibility for integration and control.

There are several common features typifying the structural development of organisations. These include:

increase in specialisation and the level of internal differentiation in roles, functions, divisions, etc

- higher skills and multiplicity of occupations
- increased use of formal systems and procedures
- shifting emphasis from hierarchical to lateral communications
- greater bulge at middle level, particularly in technostructure and support services
- greater increase in the number of people who supervise coordinate activities than those who perform basic tasks
- growing emphasis on delegation and decentralisation

The key question, however, concerns the precise nature of relationship or the fit between specific developmental strategies and particular organisation structures. Much of the research and literature fails to conclusively throw light on the interdependencies in the possible effects on structure of mulitiple concomitants of organisational development.

The available evidence, nevertheless points to a certain pattern in the relationship between strategies of organisation development and structure. The four strategies, of course, are not mutually exclusive. The choices and combinations depend on circumstances. Growth is possible through increase in volume of operations or through acquisition. Both need different approaches. The implications of diversification vary depending on market shares, technological synergy, Government regulation, management philosophy, etc. Increases in efficiency may be possible in one organisation through simple O & M studies and automation while in others the only option is product innovation. All growing organisations face problems of the type described earlier in this section. Retaining flexibility in organisation in the face of growing complexity poses tremendous burden on flow of authority and communication. The familiar model of bureaucracy needs to be modified. The improvement of vertical information systems and lateral relationship imply increase overheads, support staff and communication. The problem of elongation of organisational hierarchies and the consequencies thereof may have to be tackled by policies aimed at increasing spans of control and delegation. Control systems should shift emphasis from activities to results.

Activity C

Take the case of your or any other organisation that you are familiar with. Identify the strategy being adopted for its development and examine whether the corresponding structural changes are taking place. Try to be analytical in your observations.

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Table 1: Summary of relationships between strategies of organisational development and structure

Strategies of organisational development	Structural changes that are often assumed to be outcomes
Organisational growth Growth in size per se	Increased vertical differentiation—lengthening hierarchies Growing number of jobs and departments—horizontal differentiation Rising formalisation Increased delegation Possible economies in administration, offset by rising problems of administering complexity
Growth via diversification	Increased specialisation of skills and functions Divisionalisation of major subunits Rising formalisation especially of planning and resource-allocation procedures Increased delegation

Technological development	Growth of specialised professional staff Increased specialisation of skills and functions Other structural concomitants depend on the type of technology employed
Acquiring a secure domain through noncompetitive means—especially joint programs	Establishment of new roles especially to manage relationships with other organisations Increased delegation More active internal communications via lateral relationships
Improving managerial techniques with a view to enhancing flexibility	Depends on methods adopted, but usually associated with Establishment of new specialised roles to service vertical information systems—for example, computer-based systems—or to promote lateral coordination More active internal communication via lateral relationships Increased delegation.

Source : John Child and Alfred Kieser, 1981. Development of organisations over time, in Paul c Nystorm and William H. Starbuck (Eds.), Handbook of Organisational Design (Volume 1), London, Oxford University Press.

4.6 SUMMARY

We have considered Henry Mintzberg's conceptualisation about the five basic parts of an organisation and examined the role of each part. We have attempted to grasp the rationale behind Alfred Chandler's observation that structure follows strategy. We have noted the steps in the design process and observed that the shape of an organisation does not depend merely on principles because the design process is both a science and an art and the outcome is contingent on a host of variables. The restructuring strategies have to be appropriate to the development strategies. For clearer understanding of the issue involved, a case study on organisation redesign in Oil and Natural Gas Commission (ONGC) is appended to this unit.

4.7 SELF–ASSESSMENT TEST

1 What are the Five basic Parts of an Organisation?

2 Do principles alone determine the shape of an organisation? Substantiate your arguments with examples that are familiar to you.

4.8 FURTHER READINGS

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APPENDIX 1: ORGANISATION REDESIGN: A CASE STUDY OF OIL AND NATURAL GAS COMMISSION (ONGC)

I Introduction

ONGC is a complex organisation employing experts in about 26 disciplines and spread over the entire country with numerous regional headquraters, project offices and sub-offices. Intra-zonal, zonal-headquarters, intra-project, project-zonal communications would themselves add to a very formidabale number. If inter-disciplinary and intra-project communications are also taken into account, the number would be appearing to be almost unmanageable. The complexity would grow further, as the anticipated growth takes place.

In 1982, ONGC decided to redesign its organisation with a view to overcoming the various barriers to creating an achieving environment. A number of measures were initiated to ensure wide acceptability to their efforts. Not only basic framework was proposed and circulated, but a number of meetings at different levels were held to discuss various points of view and the main framework was suitably amended without sacrificing the main features. ONGC also appointed consultants for presenting a detailed scheme for implementing the basic framework of organisational re-design. The consultants, through their wide discussions from the top to the lowest level and by collecting and analysing detailed data contributed to refining the basic organisational design model and giving recommendations for a phased implementation of the new organisational design. Marginal changes in the organisation design were suggested on the following lines to substantially improve working of ONGC.

II Organisational Redesign–Major Thrust

The main concepts of the finally accepted organisational design were:

- Creation of a functional organisation with emphasis on functions rather than projects/products.
- Developing an effective co-ordination mechanism.
- Optimal spans of control and levels of management.
- Commercial transactions and profitability orientation.

Among others, the organisation design also emphasised:

- flexibility to borrow technology, if necessary;
- urgent need for improving the quality of equipment;
- importance of quality assurance;
- importance of human resource development, providing opportunities for growth.

Adapted from Y.P. Kedia, organisation Development at ONGC: A Case Study, Abhigyan, Spring 1985, pp. 97-107.

III Functional Organisation in Enhancing Profitability

Existing Organisational Features

The organisation at the project and the regional level was already structured according to various functions, but there was a tendency to revert to a "MATRIX" type of organisation in which various functions were brought under the control of one Project Manager Co-ordinator for various activities like the project itself, deep hole drilling, work-over-rig operations, surveys etc.

Basically, the matrix organisation is supposed to cut across the subgroup goals and emphasize the acheving of organisational goals. But, finally in the long run, the sub-group goals must be efficiently achieved, otherwise the organisational goals themselves are likely to be jeopardised. Moreover, the cost of achieving the project goals through this type of co-ordination alone are progressively increasing and it was also becoming difficult to maintain the resources in a fit condition.

Main thrust of the reorganisation

The functional organisation has been recommended with main thrust on:

- re-structuring of various groups on a functional basis;
- complete involvement of the groups in their functions;
- complete support to these functions at all levels;
- enhancement of specialisation;
- simultaneous attention to individual, group and organisational objectives.

Changes at the Commission Level

As a first step the membership of the Commission itself was reorganised. Before the organisational change, the six full time members of the Commission were holding responsibilities as under:

- Off-shore drilling
- On-shore drilling
- Exploration
- Materials
- Finance
- Personnel

In the revised order, the responsibility of the six members would be:

- Exploration
- Drilling
- Technical
- Operating
- Finance
- Personnel

Out of these, Exploration, Drilling, Technical and Operations have been recognised as Business groups and Finance and Personnel as Service groups. The main thrust of the proposed change at the Commission level would be to recognise the importance of all functions. For the first time, a Member has been proposed to be the in-charge of the Technical Services, highlighting the importance of the Technical Services also in the future plan of the Commission.

Drilling operations, both off-shore and on-shore, have been placed under the control of one Member, to enable full and timely exploitation of the sub-service geology in each basin, the same extending from on-line to off-shore, the problems of drilling being common.

Functional Reorganisation at other levels

The various functional groupings were then identified as independent groups, which were also to act as Profit centres later and the same were placed under different members as follows:

- Geology and Physics under Member (Exploration)
- Chemistry and Drilling under Member (Drilling)
- Mechanical Engineering, Civil Engineering, Electrical and Electronics, including Communications, Instrumentation, Auto Maintenance, Machine and Plant Maintenance under Member (Technical)
- Construction Engineering, Operating and Marketing under Member (Operation)

These functional group were required to act as contractors providing specialised services to the different groups requiring their services on purely commercial basis. For example, when a drilling has been ordered, Drilling Group would be a contractor to the Operating Group and the various service groups, like Mechanical Engineering, Civil Engineering, Chemistry etc., would provide services on contract basis to the Drilling Group. This orientation for providing services on a contract basis would naturally lead to a commercial bias in the working of the various groups, whereas, at present, these groups are operating with staff provided according to the norms and with an ever increasing demand for the same. In the contract type of working, the emphasis would be to finish the job with the minimum cost once the contract price has been fixed. Apart from profitability, this is likely to develop the entrepreneurship amongst the various groups who are likely to organise themselves more efficiently.

Reducing the Operating levels

A very significant step in the functional organisation was to elminate the project level. At present, after the Commission level there are regional headquarters and the project headquarters for each project and then working sites. In the revised organisation, the project level has been eliminated and the regional headquarters will be combined into one zonal headquarter for each zone.

Reducing one level by itself leads to many advantages in terms of better communication, lesser staff requirement, better grouping of specialised services etc. However, the advantages of this step are of far reaching importance, in as much as this step does away with the matrix type of organisation and places high confidence in the working of the functional groups at the site and on their ability to co-ordinate amongst themselves to complete the specific tasks. It does not require the Project Manager to hold lengthy co-ordination meetings with a view to sorting out inter-disciplinary problems, but places more emphasis on better initial planning of resources and personnel for site operations and then leaving it to the site staff to accomplish the task in the most efficient manner. The very thought of recognising the importance of the site people would go a long way in creating an achieving environment in ONGC.

IV Co-ordination Mechanism

Strategies for Better Co-ordination

Co-ordination, as a management function, does not have full support of the management experts. Need for co-ordination arises when the basic management functions, like planning organising, directing or controlling, are carried out inefficiently and midterm correction is required. Therefore, the following action strategies have been agreed upon to improve the inter-group co-ordination:

- Improvement in initial planning
- Attention to systems of communication
- Standardisation of work content, work output and information flows
- Creating forums for mutual adjustments.

V Optimal Spans Of Control

Short Structure

The number of authority levels at different project sites ranges from 5 to 7 and by indications the structures are tall.

It is intended to make the organisation flatter and never have more than five levels of decision making. This does not conflict with the promotion policy as dependent on the working structure, different levels in the organisation can be allotted for similar tasks at the same level.

Span of Control

The spans of control at levels were to be very small. In some cases, a 1:1 span of control was also noticed. Seeing the problems arising out of the shorter span of control, there is now a decision to increase the span of control at the supervisory level to be between 3 and 5 and chargeman/technician level between 8 and 15. In specific situations, the span of control can be made less like in designing.

Interdependency

The facilities and resources to be provided with various groups would depend upon the inter-dependency ratio for that group. Inter-dependency for group, say A, has been defined as follows:

$$\text{Inter-dependency ratio of 'A'} = \frac{\text{No. of groups on which A is dependent}}{\text{No. of groups which are dependent on A}}$$

Those groups which have a low inter-dependency ratio have to be provided more resources so that they can satisfy the number of groups which are dependent on them, whereas those having a high inter-dependency ratio must be assured that the groups on which they are dependent would provide them quality and timely service. The co-ordination mechanism involving such groups will also be stronger than the others.

Intra-Group Functional Organisation

The various groups would also be encouraged to organise themselves on a functional basis rather than on a product basis. To-day, various groups like Auto Maintenance Group and the Central Maintenance Workshop are organised on a product basis. They would find the quality of workmanship improved if the organisation become a functional one.

VI Commercial Transactions And Profitability Orientation

Profit Centre Concept

Under this concept, all the groups/divisions/departments are first reorganised and assigned specific responsibilities. These departments are supposed to work as independent units within the organisation and deal with the other groups on a commercial basis. This means that they provide services to other groups/departments and get paid for providing these services. In turn, they make use of the services of the other departments and make payment for these services. The operating surplus, as reflected in the difference between the payments received and the payments made for the services as well as for the costs incurred within the group, is a measure of the profitability of the group

Since, normally, there is a limit to the price which can be charged for the various services rendered by the group, each department will have to:

- take action to minimise the cost of providing these services in order to generate a surplus; or
- utilise its assets most optimally so as to decrease the fixed cost per unit of service rendered.

The pre-requisites to working on Profit Centre Basis were identified as following:

- Identification of Front Centre groups
- Measurement of work
- Commercial transactions
- Sharing of profits
- Penalty Damages
- Common accounting system
- Treatment of losses and profits

However, the existing system is as following:

- Despite the motivation of profit sharing, the departmental heads are not very sure of motivating the staff to work for enhanced productivity and cost reduction.
- It is difficult to measure the performance of many service groups and to fix the rates for their services.
- Some departments are designed on a captive basis and if the consumption group does not require their services, they will be idle.
- Comparison with market rate is unavoidable and, being in public sector, this comparison may put them in bad light.
- Strong leadership is necessary to make the profit centre working successful.

Those constraints are sought to be overcome, through sustained efforts in a phased manner:

- intra-group re-organisation;
- setting up adequate co-ordination mechanism;
- proper authority allocation;

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