HUMAN ASPECTS OF

SYTEM CHANGE :

PART I

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OPSOMMING

Daar bestaan onder bestuurders en sisteemontleders 'n neiging om die menslike probleme in organisasie-verandering te onderskat.

Bestuurders en sisteemontleders moet meer aandag aan die gedragswetenskappe bestee, omdat menslike aspekte van sisteemverandering, met die wyer toepassing van bestuurs- en inligtingsisteme, steeds belangriker gaan word.

In hierdie artikel word verskillende gedragsaspekte van verandering bespreek in hulle verband met die omgewing, die organisasie, en die individu en groep binne die organisasie.

CHANGE AND THE MODERN ORGANISATION

In recent decades the rate of change has been impressive. Space exploration, jet aircraft, heart transplants, computers, polio vaccine, credit cards, tubeless tyres, atomic power, man-made fibres, colour television and lasers were unknown in 1940·

Although these innovations are mainly of a technological nature, social economic and political effects of recent change are also clearly discernable. Air and water pollution, noise, population growth and motoring safety have become major social issues. In the field of economics and finance the rise of Japan and West Germany, the introduction of special drawing rights and the power of· trade unions in western countries, are examples of recent trends. On the political front the movement to independence in Africa, the spread of communism and the isolation of South Africa are significant changes.

At the same time an "information explosion" has occurred. Approximately 90% of all scientists ever trained are now living (Sanders, 1970; Murdick and Ross, 1971) and they generate five million articles of a technical nature each year (Sanders, 1970).

Not only has the environment become more complex for the normal organisation but there is reason to believe that the rate of change is

accelerating (Murdick and Ross, 1971; Sanders, 1970; Lawrence and Lorsch, 1967).

The effects of all these changes and the adaptations required for survival are of major concern to every organisation. In this paper, therefore, the problems of organisational change will be considered and, in particular, changes affecting management and information system and the human beings concerned with these systems.

THE NEED FOR HUMAN AWARENESS IN SYSTEM CHANGE

Change programmes in the fields of management systems and information systems have, until recently, tended to concentrate on limited areas of the organisation at any one time. In spite of the fact that activities have generally been limited to "computerising the payroll" and "mechanising stores", the difficulties encountered have usually been human rather than technical in nature. With the increasing recognition of the need for an integrated approach to management and information systems brought about by the advent of management information systems (MIS), management by objectives (MBO), integrated planning and control (IPC), and other recent management techniques, the human problems encountered in system changes are likely to increase dramatically rather than diminish.

South African managers and systems engineers will have to face this with a greater awareness of the human aspects of system changes and all that this implies or face the consequences of an even less impressive record of successful change programmes. Their knowledge of organisational problems and opportunities will have to broaden and, in particular, they will have to consider what is to be learnt from the behavioural sciences such as psychology, sociology and anthropology concerning human behaviour in the context of business system change.

This is an awesome prospect as the area is complex and relatively unexplored. This paper may be seen as a preliminary effort to start the ball rolling.

OBJECTIVES

If it is true that the human aspects of system change are typically underestimated, an analysis of these aspects should contribute towards the more effective implementation of change programmes, and so an attempt has been made to:

— summarise relevant theory and research for the change agent (manager, consultant or analyst)

— provide conceptual frameworks within which the practitioner can approach behavioural problems

— highlight important behavioural considerations and problems

— where possible indicate approaches that may assist the practitioner to foresee and overcome behavioural problems.

There are clearly difficulties inherent in this approach:

— It is difficult to provide useful information without venturing too far into the base disciplines of psychology, sociology and anthropology.

— The behavioural sciences are in any case relatively undeveloped in the area of system change.

— It is a complex area of study.

— In the light of what has been said it is difficult to avoid over-simplification and unwarranted conclusions in attempting to derive practical value from the exercise.

For the most part the principles discussed should be of general applicability to any kind of change.

SOURCES OF CHANGE

Internal stresses within the organisation may lead to change. These stresses are themselves often the result of change processes external to the organisation. In addition both internal or external triggers may initiate the change process. An external trigger may take the form of some technological innovation, such as man-made fibres, that impacts an organisation in the wool industry, while the death of a senior manager may trigger internal changes.

ORGANISATIONAL ACTION IN THE FACT OF CHANGE

Faced with the prospect of change an organisation may:

— attempt in advance to influence its environment in such a way as to minimise the adverse effects and maximise the opportunities it offers. This is political action and is discussed further below,

— react internally to adapt to a change after it has occurred,

— reduce risk by planning foreseeable changes,

— structure itself to cope with unforeseeable change.

Greiner and Barnes (1970) maintain that most of the attempts by the organisation to adapt to the external environment are "reactive" rather than "pro-active".

INTERNAL CHANGE VARIABLES

It is as well to consider in broad terms, what may change within an organisation.

One way to analyse the internal effects of change for an organisation is to identify the internal variables that are affected (Leavitt, 1964).

1. **Actors** — the groups and individuals in an organisation.

2. **Tasks** — the basic manufacturing and servicing functions in the organisation.

3. **Technology** — the machinery and skills of the organisation.

4. **Structure** — systems of communication, authority and work flow.

In the light of this analysis one can talk in broad terms of technological, structural or social changes. Naturally these variables are interdependent and inter-related so that manipulation of one will usually initiate a reaction by one or more of the others. In the case of social changes (actors or people) we need to change internal behaviour patterns.

HEADINGS UNDER WHICH HUMAN ASPECTS OF SYSTEM CHANGE WILL BE DISCUSSED

The human aspects of system change will be considered further under the following headings:

1. The Environment

The environment serves as the source of inputs for the organisation. These inputs include men, money, machines and material. The environment is also the user of the products or services which are the output of the organisation. It may thus be seen as a constraint on organisational structure and behaviour.

2. The Organisation

The organisation may be described as a goal-directed social system with inputs, transformation processes and outputs, existing in an environment. It is made up of a number of interdependent, interrelated and interacting parts. In his definitive view of the organisation as a system, Scott (1961) identifies the parts of the system to be

— the individual and his personality

— the formal organisation

— the informal organisation

— the physical setting in which the job is performed.

The processes linking these paterns are:

— communication which activates the system

— balance which is the objective or goal towards which all parts must be directed

— decision making which is necessary to achieve the balance.

3. The Group

We mean by a group a number of persons who communicate with one another often over a span of time, and who are few enough so that each person is able to communicate with all the others, not at secondhand, through other people, but face to face (Homans, 1965, p. 1).

4. The Individual

The individual is the smallest human element of the organisation and is common to other units such as the group and the organisation.

5. The Change Agent

As an individual, the change agent is subject to all the considerations affecting the individual but his specific role of change agent gives rise to special problems.

6. The Political System

In the unit of human interaction called "politics" we include power, influence and authority relationships.

7. Resistance to Change

The inportance of resistance to change warrants a careful consideration of its nature and causes as well as ways of reducing it.

8. The Planning and Implementation of Change

More specific human aspects emerge in the consideration of the process of planning and implementing change. In particular pitfalls and success patterns in change programmes require attention.

THE ENVIRONMENT

Enough has been said above to support the view that the environment of a normal organisation is complex and changing. It exerts cultural, social, economic, technological and political influences on the organisation. As the environment is usually beyond the control of the organisation it constitutes a source of uncertainty for the organisation and dealing with uncertainty forms a major task of the organisation (Thompson, 1967). In general terms environments for a particular organisation, vary from stable to shifting and homogeneous to heterogeneous (Thompson, 1967).

The stability and homogeneity of its environment exercise a direct influence on the structure of an organisation in terms of the number of differentiated functional units it contains and the effectiveness of the processes required to integrate these functional units. The more diverse the environment, the more differentiated the organisation and the more elaborate the integrating devices (Lawrence and Lorch, 1967).

The uncertainty inherent in the environment also affects organisational behaviour. Since the basic manufacturing or service functions of the organisation operate most efficiently without uncertainty organisations seek to buffer environmental influences by surrounding their technical cores with input and output components (Thompson, 1967, p. 20).

The devices used to buffer the technical core include:

— forecasting of demand

— carrying inventories of raw materials and finished goods

— levelling of demand by offering off-season inducements to buy the product

— rationing the product in times of excessive demand.

Further discussion of the environment is not warranted as its behavioural aspects are relatively limited.

Practical Implications of Environmental Interactions

For the change agent or practitioner the practical implications of environmental interactions may be briefly summarised as follows:

1. The environment is a source of change. In particular its effects on organisational structure and behaviour cannot be disregarded by the practitioner.

2. Any attempt to plan for change must include an analysis of forces in the environment that may lead to change within the organisation.

3. The environment consists of other individuals, groups, organisations and systems. Many aspects of human behaviour are therefore equally applicable to the environment. This fact must be borne in mind when change effects may extend outside the organisation — for example pollution. In this context also, the environment may constrain the types of change possible. Organisational changes that run counter to the culture of the environment will encounter opposition.

THE ORGANISATION

Organisational Objectives

The question of what the objectives of a business organisation are, and who sets them, is one of the most contentious in modern business literature. There are those, such as Rädel who maintain that profit maximisation is the goal of the business organisation and others such as Peter Drucker who postulate survival of the firm. Thompson (1967) and others see the goal-setting process of the organisation of a process of negotiation between coalitions. The objectives of the organisation would tend to become those of the dominant coalition.

As far as the change agent is concerned, it is important that he attempt to establish what the goals of the organisation are for they constitute constraints on his change programme. It is not often that goals are formally recorded and, in many instances, actual organisational behaviour may be at variance with the views held by senior management concerning goals. However, unless the practitioner can gain successful access to the goal-setting mechanism of the organisation, whatever it is, he must be largely limited by the goals he is able to identify.

In order to provide a framework for analysing the behavioural interaction within the organisation, the parts of the organisation identified in a previous section will be used.

1. The Individual and his Personality

The individual will be dealt with in more detail in the following section.

2. The Formal Organisation

The formal organisation may be regarded as the job relationships specified in the organisation chart. It includes the concepts of authority, responsibility, function and reporting lines. The formal organisation deals with the job relationships and not with the people who fill those jobs, so the change agent must look further to obtain a complete understanding of organisational interaction.

3. The Informal Organisation

Informal organisation constitutes that network of personal and social relations which are not defined or prescribed by formal organisation (Miller and Form, 1964, p. 224).

As it is composed of people, the informal organisation is concerned with individuals, groups and political behaviour. These aspects are covered in more detail later in this paper. The informal organisation may give rise to behaviour at variance with the formal organisation so it is necessary to list briefly some functions of the informal organisation (Miller and Form, 1964).

1. To perpetuate informal group culture and satisfy group needs.

2. To maintain a communication network (grapevine) and so keep members informed of matters concerning their welfare.

3. To exert social control over members and so ensure their conformance with group norms.

4. To provide interest and fun in a work environment.

4. The Physical Setting

The physical setting cocerns the systems, machines and processes of the organisation. Scott (1961) explains further as follows:

"In the physical surroundings of work, interactions are present in complex man-machine systems. The human "engineer" cannot approach the problems posed by such inter-relationships in a purely technical, engineering fashion" (Schoderbek, p.34).

In essence the physical setting must be compatible with, and adapted to, the requirements of the men concerned with it.

5. The Linking Processes

While the linking processes of communication, balance and decision making are of vital importance for the well-being of the organisation, it is not proposed here to further consider their significance to the human aspects of system change. Those aspects of the linking processes that concern us in this paper have been covered in other areas.

Practical Implications of Organisation Inter-actions

1. Goals

The implications of organisational goals can perhaps best be stated by posing a number of questions that the change agent should ask himself:

— How are the goals or direction of the organisation determined?

— Who determines them?

— What are the explicit and implicit goals?

— If the direction of change and the organisational goals are incompatible, where and how must the adjustment take place?

2. Balance of the Organisation

The organisation, at any point in time, exists in a state of dynamic equilibrium. Stresses between its parts, namely coalitions, groups and individuals, are in a state of balance. The change agent needs to know the answers to questions such as the following:

— What forces have produced the present balance?

— What degree of stability does the organisation have? If it is relatively unstable more caution is required with the implementation of change programme.

— What parts of the organisation are most susceptible to change and what parts resist change?

3. Feedback

The implications of feedback are well described by Chin (1864):

"Improving the feedback process of a client system will allow for self-steering or corrective action to be taken by him or it. In fact, the single most important improvement the change-agent can help a client system to achieve is to increase its diagnostic sensitivity to the effects of its own actions upon others. Programmes in sensitivity training attempt to increase or unblock the feedback processes of persons; a methodologi-cal skill with wider applicability and longer-lasting significance than solving the immediate problem at hand. In diagnosing a client-system, the practitioner asks: What are its feedback procedures? How adequate are they? What blocks their effective use? Is it lack of skill in gathering data, or in coding and utilizing the information?" (p. 303.)

4. Change Capability

The ability of the organisation to cope with change needs to be considered. In this context the skills and manpower available are significant. It is also important to consider the past history of change in the organisation since a history of successful change will greatly improve the chances of success of subsequent change programmes.

5. Control of Change

The change agent should consider what control needs to be exercised by him over the direction, tempo and quality of the change, and how to achieve this control.

THE GROUP

Individuals join informal groups, usually un-related to the formal organisation structure, to achieve social satisfaction and support. In a frustrating or threatening environment the group may:

— afford a sense of comfort

— help members by acting against the threat

— strengthen the member in his own opposition (Tannenbaum, 1970).

In return for satisfying social and security needs of its members, the group develops social control mechanisms and demands conformity to group norms. These norms do not automatically support organisational goals or necessarily lead to increased productivity. However, the satisfaction of social and security needs by group membership may improve morale and job statisfaction and reduce job turnover and absenteeism (Tannenbaum, 1970).

Generalisations on Group Behaviour

Sociologists have arrived at certain generalisations concerning group behaviour. Some of the more relevant examples of such generalisations are provided by Miller and Form (1864).

— Group interaction always includes communication between members.

— Every group shares a number of ideas, beliefs, customs, values and sentiments.

— All groups tend to regard themselves as superior to other groups on the same level.

— A group is a dynamic entity always in the process of being built up or broken down.

— The leader of an informal group is not necessarily a leader in the formal organisation structure and is usually the group member who is at the centre of the communication network and adheres closest to group norms (Homans, 1965).

— Since group solidarity and survival depends on stable social relations, groups tend to resist change (Scott, 1961).

— Individuals may belong simultaneously to a number of groups both inside and outside the organisation.

Practical Implications of Group Interactions

The group is a significant factor in any situation. In a series of experiments Kurt Lewin found a group decision approach two to ten times more effective than a lecture in which employees were urged to change. Cartwright (1969) concludes that:

"We may state that the behaviour, attitudes, beliefs and values of the individual are all firmly grounded in the groups to which he belongs" (p. 727).

Groups may, therefore, be seen from a number of viewpoints — as a medium of change, a target of change, or an agent of change. Cartwright (1969) has set out a number of important principles concerning change and group dynamics:

1. The greater the cohesiveness of a group, the more effective the group is as a medium of change.

2. The closer the desired attitudes are to the norms of the group, the greater the influence the group can bring to bear.

3. The greater the prestige of a group member, the greater the influence he wields.

4. Efforts to change members of a group in a direction counter to its norms will encounter strong resistance.

5. If a group recognition of the necessity to change can be achieved, internal group pressure for change will result.

6. Communication regarding all aspects of the change must exist in the group.

7. Change in one sector of a group will induce strain in other parts, This can be reduced only by removing the change or bringing about adjustment in the sectors under strain.

By taking such principles of group dynamics into account the change agent may be able to use the informal group as a apowerful positive force for change and reduction of resistance to change. On the negative side he should be aware of the group's innate resistance to change due to the fear of disrupted social relationships. The effectiveness of this approach will clearly depend on the skill with which it is applied.

THE INDIVIDUAL

The study of the individual and his personality is a complex and diverse one. It is therefore possible to deal with certain aspects only.

The first concept for consideration in this extremely complex study area is that of **personality.** Personality may be defined as the persistent, unique patterns of behavioural adjustment of an individual and is a function of both heredity and environment. Three aspects of personality and behaviour are of particular interest in any consideration of change, namely, perception, motivation and leadership.

Perception

Perception is the word used to describe how external stimuli are received, organised and interpreted by the individual. Perception is determined by the individual's senses, the culture

in which he lives, the conditioning and training experienced by him, social factors, emotions, and his motivational state at the time. An individual's perception of himself, his role, and the particular situation, determine his behaviour.

Motivation

In psychological terms, motivation can be defined as the willingness to expend energy in order to attain a goal and so satisfy a need.

This definition may be contrasted with the usage in business of the term motivation as synonymous with productivity. A person is "motivated" if he is doing what is expected of him. For the time being it is the former usage of the word that is of concern here and we need to examine those human needs that result in motivated behaviour.

Perhaps the best classification of human needs so far developed is that of A.H. Maslow (1943). He arranges the basic human needs in a hierarchy from the "lower" needs to the "higher" needs. The "lower" needs must usually be satisfied first.

1. The physiological needs — air, food, water, rest and selfpreservation are some examples.

2. The safety needs including stability and security.

3. The love needs — the need for love, affection and belonging.

4. The esteem needs — the need for self-respect, self-esteem and the esteem of others.

5. The need of self-actualisation — the need to do what one is fitted for and to achieve everything one is capable of achieving.

Maslow (1943) discusses physiological, safety, love, esteem and self-actualisation goals as follows:

"These basic goals are related to each other, being arranged in a hierarchy of prepotency. This means that the most prepotent goals will monopolize consciousness and will tend of itself to organize the recruitment of the various capacities of the organism. The less prepotent needs are minimized, even forgotten or denied. But when a need is fairly well satisfied, the next prepotent ("higher")

need emerges, in turn to dominate the conscious life and to serve as the center of organization of behaviour, since gratified needs are not active motivators.

"Thus man is a perpetually wanting animal. Ordinarily the satisfaction of these wants is not altogether mutually exclusive, but only tends to be. The average member of our society is most often partially satisfied and partially unsatisfied in all of his wants. The hierarchy principle is usually empirically observed in terms of increasing percentages of non-statisfaction as we go up the hierarchy. Reversals of the average order of the hierarchy are sometimes observed. Also it has been observed that an individual may permanently lose the higher wants in the hierarchy under special conditions. There are not only ordinarily multiple motivations for usual behaviour, but in addition many determinants other than motives" (In Huneryager and Heckmann, p. 354).

As this explanation brings out, the hierarchy is not an absolute thing. It differs from person to person, society to society, and from time to time.

In everyday terms an individual joins an organisation because he believes he will be able to satisfy some or all of his needs directly, or indirectly, through the remuneration he receives. This may not be a conscious decision on his part and the need satisfaction may derive from the informal organisation — such as the satisfaction of certain social needs within an informal work group.

So far the discussion has revolved around the motivation of the individual and his motivation to work. From an organisational or systems change point of view it is also necessary to consider briefly how a work situation may be created within which the individual will be motivated. Since motivation is within the individual, strictly speaking a manager cannot "motivate" his employees except in terms of the colloquial usage mentioned above. In this case the manager is really attempting to encourage behaviour of the part of the employees that supports the achievement of organisational goals

as perceived by the manager. In order to achieve this end he must make it possible for each individual to satisfy a sufficient number of his needs within a work situation that supports the achievement of organisational goals.

The conclusions of Frederick Herzberg (1968) are well summarised by Murdick and Ross (1971) and are relevant to the discussion of the motivation to work. Herzberg differentiates between "hygiene factors" and "positive motivators". Hygiene factors such as working conditions, policies and administration, and money may be causes of dissatisfaction, but, if improved, do not necessarily result in greater motivation on the part of employees to increase productivity. Positive motivators are those motivators related to the content and process of the work itself, as opposed to the job context. The employer, by enriching the job, may make it possible for the individual to attain higher need satisfaction at the esteem and self-actualization levels.

Any discussion of motivation is incomplete without reference to the thwarting of motivated behaviour. Frustration will result but this may be temporary only if some detour around the barrier can be found. If the barrier is insurmountable other adjustment measures will be necessary. The point at which adjustment takes place, and the nature of the adjustments, depends on the frustration tolerance of the individual concerned. Frustration may cause a loss of goal orientation if the barrier seems insurmountable. In such a case the person may avoid solving the problem and resort to some form of compensation such as fantasy, projection, rationalisation, repression or regression.

Leadership

The third aspect of behaviour to be discussed here is that of leadership. Leadership may be divided into two categories — formal and informal (Murdick and Ross, 1971).

A formal leader is one whose leadership position derives from the formal organisation structure. An informal leader is one whose personality, knowledge, identification with an informal group, or other qualities give rise to his position as a leader. A manager should ideally be both a formal leader and an informal leader.

Most writers concede that it is not possible at this time to define any universal leadership qualities. Some writers venture commonly found characteristics and Homans (1965) lists rules followed by the leaders he observed.

In addition, the question of leadership style has received a good deal of attention. Both democratic (or participating) leadership, at one end of the scale, and autocratic leadership at the other end, have been effective. Leadership requirements seem to vary from situation to situation depending on the personality of the leader, the situation itself, and the personalities, attitudes and skills of the followers. Different leadership styles are clearly required for a group of manual labourers as opposed to a group of architects.

A leader therefore requires "situational sensitivity" (Redding 1972) to read the situation correctly and determine what leadership behaviour would be most effective.
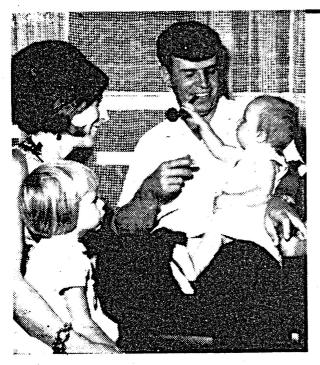
The Practical Implications of Individual Behaviour

1. The human personality is complex and unique. The change agent or practitioner should guard against unwarranted generalisations when it comes to the behaviour of individuals in a change situation. One important reason for the uniqueness of each human personality originates from differences in perception of self, personal roles and situations.

2. Individuals are participating in the organisational setting because, consciously or unconsciously, they expect to achieve satisfaction of their needs. The practitioner in a change situation should make a serious attempt to identify these needs and ask himself how the satisfaction of these needs will be affected by the change.

3. Arising from the previous point, Herzberg's work suggests that attention should be paid to the enrichment of postchange jobs and the maintenance of adequate salaries and work conditions.

4. The practitioner should be sensitive to the situation and, as far as possible, apply the leadership style appropriate to the individuals

and groups affected by the change.

5. One of the adjustments to the anticipated thwarting of individual goal attainment may be resistance to change. This is of sufficient importance to warrant separate discussion later.

Further facets of individual behaviour and implications for the change agent, or practitioner, will be discussed in subsequent sections.

TO BE CONTINUED