CHAPTER 2

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Image about computers varies from individual to individual and from level to level in an organisation. Some individuals have very positive image, and some others have a negative image about computers. Usually those whose work involves the use of computers or where computers can help or support their activity, they are likely to have its positive image. On the other hand, if the use of computer results in the change of role, change of the nature of work, requires independent judgement, people will have its negative image (Pareek, Ghosh & Sarupia 1975). Faced with the various situations, images result employees perceive those situations/objects positively or negatively. The perceptions about the computers depend upon the background, skill, area of work, knowledge, level and personality dimension of the individual as well.

Some of the experts who perceive the computerisation of industries positively, say that the measures taken by the industries like adaptation of suitable organisational structure, enhancing their manpower, training of the employees and modifying their systems and procedures need to be supplemented with the introduction of appropriate
technology for ensuring efficient functioning of the industry. Those who are against it, express concern about the likely unemployment, job design and content, health and safety, the implications for the working environment, the involvement of the employee representatives in management decision making and so on (Sethumadhvi 1984). Infact, any change in the work technology will effect people, system and structure and hence employees of the industry too are very likely to perceive all such effects.

Perceptions in the industry shall be prominent because of changes in the relationship between individuals, i.e. between employees/managers and customers and between individuals in the organisation at various levels of hierarchy. While error free and quick service may result due to computerisation, the increasing use of technology can obliterate the personal touch from the customer service to such an extent that the dealings with the customers may become mechanical. On the other hand, if due to routinisation of certain processes, more time is available for the employees to establish better relationship with the customers both present and potential, the effort will be wholly beneficial. Much depends on how problem is approached and the perception and attitudinal norms followed. Perceptions are generally negative because the fears are generated when a change is introduced, which stem from an initial lack of knowledge of the effects of such change on
security, work content and adequacy of personal skills.

Much of the research work has dealt with intended consequences i.e. reduced costs of payment services, increased competition among financial institutions, increased customer convenience, and the like. The questions posed by unintended and unanticipated, or second order consequences have thus far been largely overlooked.

2.1 ATTITUDE TOWARDS COMPUTERS:

Perception are about the objects/situations, whereas the attitudes are towards the object/situation, i.e. the resultant of the interplay of perceptions that gets reflected in the form of reactions, motivated behaviour, is nothing but attitude. Thurstone (1929) defines attitude as the degree of positive or negative affect associated with some psychological object. An individual who has associated positive affect or feeling with some psychological object is said to like that object or to have a favourable or positive attitude towards that object. An individual who has associated negative affect with the same psychological object would be said to dislike that object or to have an unfavourable attitude towards that object.

Although computers have been in demand, and there are distinct advantages of computers, because of several factors, the attitude towards computers range from very
favourable to very unfavourable (Pareek, Ghose & Sarupia 1975). The successful introduction of computers, although heavily influenced by traditional, technical and administrative practices, is also directly affected by the attitudinal reactions of the organisational members. Zuboff (1982) points out some consequences of poor coordination and attention to these attitudinal reactions in computerisation: "What happens when a group of people are suddenly made to feel powerless and undervalued because of the introduction of computer technology. First there are obvious problems of morale and motivation. If employees depend upon the computer system in order to accomplish their work, but the system experienced as an enemy, than the quality of the work must suffer."

The reactions of the employees to the introduction of computers in industries generally fall within one of the three broad categories. Those, who are enthusiastic and supportive of the technology, those who are very resistant to its introduction and a vast majority are ambivalent and generally take a wait-and-see attitude. The variation in the attitude is dependent upon several factors including prior experience with the electronic technology, employee age, length of employment and degree of task frustration experienced under the manual system of work (Fallik 1988). The employees who have grown up with computers, who have not spent a great deal of skill or knowledge in learning
manual tasks or those who viewed manual performance as a frustrating, time consuming, tend to be positive about the introduction of computers. In contrast, the older employees who have spent years of experience in learning the intricacies of the manual system, who doubt their competence with electronic systems, or who see themselves as having achieved successful performance with the manual system, are much less likely to greet the introduction of computers.

Little in the way of literature exists on capitalizing on the positive attitudes of those employees who see computerisation as a positive force. The literature is rife with information regarding resistance to change. Therefore, it must be recognised that computerisation does not necessarily imply placing of sophisticated equipment at all offices straight-way. This is not possible either. What is more important is the inculcation of new attitudes all round and the spreading of an awareness about the existence of new tools, creating the urge in employees to use them and training them to do so (Joshi 1987).

The viewpoint of the employees of the industry have reportedly remained negative from the very beginning. Not because they had earlier known the consequences of similar introduction of new work technology or they had any example to refer to, rather the idea propagated automatically in the industry circles that computerisation
is going to be detrimental to their interests. Little concerned with the socio-economic conditions that are prevalent in the western countries, union leaders have been often quoting western examples to not only make people suspicious, but also in establishing a wrong model about computers in the minds of the fellow employees.

This study investigated the attitudes held by employees of the industry using or not using computers for some or whole of its operations, towards the conflict between the positive gains from computerisation and the problems that result. This conflict is not new but has been present since the computers invaded the industry in the late 60's. Innumerable social commentators and researchers have investigated similar problems in other industries many times. The focus thus has been on the question: has society, including management and workers, been able to handle the problems resulting from industrial computerisation more effectively. If such a change has occurred, it should be reflected in the attitudes at the various levels. The extent of computerisation adopted and the handling of the resulting problems depend largely on the perceptions of industrial personnel about the benefits versus the disadvantages accompanying it (Asgharpour 1981).

**USE OF COMPUTERS**

In this research questions were asked about the
benefits gained by the industrial units with the use of computers. Most of the organisations have been benefitted with the use of computers in public as well as private sector industries. With the use of computers, over load of office work has been reduced. Profits of the organisations has increased. Management was getting up to date information with the use of computer. Efficiency in work has increased. Most of the industrial units were increasing the use of computers as long as they were becoming more aware about the utilisation of the computers. Industrial units were expanding the use of computers in every sphere of the industry according to their requirement in every department of the industry.

GROWTH OF COMPUTER IN INDUSTRIES

In early seventies computers were installed in Indian Universities as well as engineering and technological institutes in our country. However, some major industrial units started the use of computers in late seventies. In late eighties Govt of India liberalised the import of computers in the country, resulting in boosting up of computer industry. With this, Indian industries i.e. Heavy, Medium and Small industrial units both in public and private sector has boosted the use of computers.
GROWTH AND USE OF COMPUTER SOFTWARE

During seventies, computer users were using major high level languages i.e. Basic, Fortran, Cobol etc. and few lower level languages were also used i.e. Machine languages and Assembly language etc. After eighties new software packages were also used. It was observed that from eighties to early nineties computer industry as well as computer users in industrial units have increasingly using the new user friendly software packages marketed in the field of computers.

EMPLOYMENT IN COMPUTER INDUSTRIES

After late seventies it has been observed that the number of computer professionals was going up increasingly. From the analysis of collected data it has been found that there was exponential growth of computer professionals of all type i.e. Data Entry Operators, Computer Operators, Programmers, Software Engineers, System Analysts, Senior System Analysts, System Managers, Database Managers, EDP manager in industrial units both in public as well as private sectors.

2.2 PERCEPTIONS ABOUT EMPLOYMENT OPPORTUNITIES:

The Bank Employees' Federation of India (BEFI), has been protesting against the computerisation plans demanding
against the (1) massive computerisation of manual industrial operations, (2) non-filling of existing vacancies, (3) the ban on fresh recruitments and (4) mass transfer of employees. The union maintains that computerisation will take away roughly 25,000 new jobs every year and will render 50,000 employees surplus in the first two years alone (Computers Today 1985). Though industry authorities have constantly held that automation will only change the nature of jobs, not remove them altogether, the BEFI remains unconvinced.

Infact, immediately when the Indian Banks' Association had reached a settlement with the unions of the bank/industrial employees regarding the limited use of computers in metropolitan and big urban branches of Indian banks/industries, a section of the employees perceived of and hence made a hue and cry that the employment opportunities will go down if man is replaced by machine and they point out the case of Life Insurance Corporation of India as an example where there had been no fresh recruitments at the clerical level for the past one decade. Whereas the experts perception is that as the banking system develops, employment opportunities will increase. Added to the manpower required to handle so many areas (in which the industries are still to enter), industries will need some different personnel too, like programmers, computer operators etc. It is only when the major banks got
nationalised and the social obligation of the banks redefined, different classes of people like engineers, charted accountants, agricultural scientists and the like entered the banking. The same way, the introduction of computers in industry will bring a boom in employment opportunities too (Sethumadhavi 1984). The same is not true for the West, where the industrial activities are already well diversified and so the men are getting replaced by machines.

Thus there is a vital controversy between two streams of thinkers. One perceived that computer will guarantee employment, while another group of people perceived that too much of blind reliance will not only lead to economic problems of unemployment, but also, have a social disharmony in the economy (Malhotra 1987). In an underdeveloped economy like India, the biggest fear that is held out towards the coming computers is that machine will increase the unemployment problem to an unmanageable proportions.

Another important fact is that what ever the fears about the computerisation, most of them unfounded, stem largely as a result of "unknown" and "reluctance" to change. Few perhaps remember, that when the typewriter was introduced, there were loud protests from labour. Writers and clerks feared it would take away their jobs (Kanwar 1980). It was the same when the Railways came in. Horse and Bullock-cart drivers saw in it an end of their working life.
But the Railways have grown to be amongst the largest job providing organisations in India. Similarly, when it comes to computerisation of industrial services, quite logically, it could be predicted that it shall not result in decrease in the employment opportunities. Initially, there may be lessening of jobs, but, under the cover of administrative assurance that "none shall be retrenched or displaced ", employees should take a broad perspective in mind and wait for the transition period to be over.

This study deals with the impact of computers on employment in banks in a comprehensive manner based on primary data collected from the industry having computers. The analysis is focused on the perception of industrial personnel on the quantum, actual composition and quality of employment generated on account of usage of computers. An overall assessment of the net impact of the computer on employment is made by taking into account its short and long run effects on jobs created as well as jobs displaced.

2.3 PERCEPTIONS ABOUT DISPLACEMENT:

A worker is counted as unemployed when he cannot find another job. Displacement refers to the elimination of jobs as a result of technological change (Asgharpour 1981). Displacement has several forms. First, the direct form of displacement involves transfer of the displaced worker to another department in the same organisation. Second,
indirect displacement may result through vertical integration due to computerisation. Third, indirect displacement may arise when automation causes horizontal integration by increasing optimum plant size to the extent that smaller organisations are phased out of the market by competition. The fourth form of displacement is downgrading.

Since the computerisation creates high demand for the new skills which may require extensive training and education, workers may not be able to move easily into new jobs. When they cannot, they are often downgraded in work without reducing their pay.

The skill and educational requirements cause the workers to be displaced. Computerised organisations become a technological lockout for the common man since such organisations need super skilled workers and specialists and not the ordinary workers.

It is generally perceived that the most displaced personnel by computerisation would be those engaged in the clerical job. Rosemary Stewart (1971) argues that the computer potentially contribute towards: (a) reduction in the clerical staff, (b) more work with the same staff, (c) displacement of the clerical staff, i.e. loss of potential employment. On the other hand he contends that since the computerisation mean more systematic, accurate and faster work, hence it may lead to more employment opportunities and more displaced staff shall get adjusted. Based on past
experience with technological change, certain issues have been summed up by Michael Rose (1969):

The general issue of the employment and manpower effects of the computer divides into three main composite questions. Firstly, how severe have its effect been on the total number of jobs available to clerical workers, and how severe they be in future. Furthermore, what does it do to the contents of the clerical jobs which remain; how does it affect the clerk’s prospects of promotion. Secondly, how are it effects seen and interpreted by clerical workers themselves. Is there infact any important difference between what the computer actually does to the employment and what it is perceived to do. Thirdly, what results follow from the actual and perceived consequences of computerisation from an industrial relations point of view. Do affected workers welcome or resist the change, and does resistance take an individual or a collective form?

As far as the Indian industry in concerned, it is the retrenchment, that has been outsted as a method of deal with displacement because of the agreement between the employees associations and industrial management. So the other alternatives left with the management to tackle the problem of displacement are, transfer to local or outstation branches. The perception of the employees in this direction has been one of the issues studied in this dissertation. The contentions advocated by Rosemary Stewart and Michael Rose about the clerical workers have also been put to test.

2.4 PERCEPTIONS ABOUT SKILL REQUIREMENTS AND TRAINING:

The bedrock upon which any organisation is built is the people who staff it. Their competencies, motivations and commitments to the organisation are the pivot points around
which the success or failure of any programme is built. So far as the computerised systems in the industries was concerned, the fundamental personnel related issues were of three types. First was the necessity to recruit and hire a sufficient number of employees to fully staff each office. Second was the issue of employee skill required to competently perform computerised functions. Third was the issue of maintaining appropriate staffing levels of competent employees over time.

Computerisation in general have three consequences for the demand of skills in the labour force (Asgharpour 1981). First, some existing skills are rendered obsolete. Second, are diluted by a further division of labour. Third there will be a demand for new skills, usually of higher order; however, the net effect on individual worker is likely to be downgrading unless they can be retrained in new skills.

Walton (1979) gave following behavioural generalisations that describe some of the "common organisational consequences of office application of the microprocessor technology":

(1) If the computer system results in perception of decreasing skill requirements, the meaning of work may become trivial, and a loss of motivation, status and self-esteem may result. In some circumstances those who shall suffer, counter attack the system.

(2) If the system increases the perceived specialization
and separates the speciality from interdependent activities, than jobs may become repetitive and isolated, and fail to provide workers with performance feedback. Such jobs produce alienation and conflict.

(3) If the system is perceived to increase routinization and provides elaborate measurements of work activity, job occupants may resent the loss of autonomy and try to manipulate the measurement system. The fact of measurement can put excessive pressure on individuals and can strain peer relationships.

Asgharpour (1981) commenting on skill requirement clearly states that fewer workers will be needed in organisations with routine and monotonous jobs because computers will do the job. Further, the new jobs require less use of muscles and more use of judgement. Computers are often delicate and complex, and consequently a high level of skill is needed to operate them. Workers donot automatically fit into the new jobs.

In both the public and private sector industries, where not many of the fresh recruits were permitted with computers by the agreement reached between the employees and the management, there has to be a greater need for the retraining of employees in the computers. This obviously is one of the hypothesis that has been put to test in this dissertation alongwith knowing the perceptions of various cadres of employees about the adequacy of retraining and
gains in the skill requirements.

**COMPUTER VIRUS**

In most at the organisations both in public as well as private sector, it was found that most of the PC-XT's and PC-AT's were affected with computer viruses. Computer viruses which were affecting computers were mainly DOS operating system based. Some managers reported that they were fed up with the viruses, because some times important information was lost and some time software got corrupted, resulting in halting of office work.

**2.5 PERCEPTION ABOUT THE WORKING ENVIRONMENT:**

Technology is neither good nor bad. It does however, have an impact on the working environment. This impact can be either desirable or undesirable. The individuals who control and use the environment or have adjustable working environment make better decisions and give better output and consequently perceive better working environment.

Offices throughout the world are turning to computers to handle todays increasing demands for information. Technology has had, and will continue to have a dramatic impact on the working environment of the office (Ann 1982). To date, attention has been focused on the technology itself and little thought has been devoted to issues of working environment. As Dowd (1980) points out, "..... the working
environment though always mentioned, is not given equal
time". If our computerised offices of the future are to
provide human and rewarding environments to work, the same
imagination and research efforts which has created the
enabling technology, will need to be directed towards
finding a creative and productive interface between
technology and the environment. An organisation must adapt
continuously to the changing requirements of the working
environment. A passive firm faces extinction; an adaptive
firm will survive and probably enjoy modest growth; and a
creative firm will prosper and even contribute to the
changes taking place.

Asgharpour (1981) identified following 20 factors, the
perception towards which represented the perceived working
environment due to automation:

1. Satisfaction with computerised equipment
2. Improvement of wages
3. Improvement of work conditions
4. Promotion of employees
5. Job's facilitation for managers
6. Reducing paper work
7. Improving communication
8. Reducing working hours
9. Reducing physical strain
10. Reducing mental strain
11. Improving group work situation
12. Improving individualism
13. Improving level of living of employees
14. Reducing freedom of employees
15. Increasing anxiety among employees
16. Encouraging creativity and initiative
17. Increasing leisure time
18. Improvement of interpersonal relationship
19. Dehumanization
20. Displacement
As a result of the change in the work technology, the individual dimensions of the working environment in industry are also likely to result in either positive or negative consequences. Perception of change in the working environment as a result of introduction of computers in the industry forms the integral part of this study.

2.6 PERCEPTIONS ABOUT EFFECTS ON THE MANAGEMENT FUNCTIONS:

Recent advances in information technology permit data to be collected, transmitted, stored, processed, retrieved and displayed more rapidly, accurately, completely, economically and flexibly than ever before. Such advances are gradually changing the way in which management operations are performed, for example, the degree of centralization of authority and decision making, the relationship among line and staff activities, and the relative position of the data processing activity in the organisation have been affected by developments in the information technology. The content and the scope of the decisions made, the information required by and available to the decision maker, and the organisational level at which the decision are made are being influenced by changes in the decision environment and the information handling methods. The increasing complexities of business operations, improvements in the existing managerial techniques, and advances in information technology have also led to the
development of sophisticated and highly automated managerial planning and control system.

**COMPUTERS AND THE DECISION MAKING:**

Organisationally, there is evidence that computer has changed traditional line-staff relationships. In reality, data processing departments may be becoming more line (decision making authority) oriented as opposed to their traditional staff (advice) role. Such a development can be explained by the reactions of the decision-makers to computer generated information. A hypothesis worthy of testing would be that if the decision maker places a great deal of confidence in the computer, than the data processing department functions more in a line capacity. By the same token, if the decision maker has little confidence in the computer, than the data processing department becomes more of a staff function. In other words, it may be said that the way in which the data processing department influences the decision making process depends, in part, on the perceptions of the human decision maker (confidence in the computer may be treated as the function of knowledge about the computer and highly favourable attitude) to the computer itself.

Also the computer experienced subjects would perceive computerised decision making more suspiciously and shall not be confident of computer derived information than would the non-experienced.
LOCUS OF DECISION AUTHORITY:

Despite the general agreement the computerisation presents management of organisations with new possibilities and alternatives in decision making practices, the issue of whether computerisation tends to facilitate centralization with in organisations or whether its potential for monitoring activities instead favours a decentralization trend, is yet to be resolved (Dawson & McLoughlin 1986).

The capacity of computer information technologies to capture, process and transmit large quantities of information at high speed has important implications for the ability of the management to control operations. This is especially the case where these operations are geographically dispersed across several operating areas or units which are remote from head quarters of both the public and private sector industries. Computer based management information systems are a potential means by which such operations can be made more 'visible' to senior management and thus open to more direct control.

Such an application of computer technology raises obvious questions about the role of the supervisory function in relation to management control systems since supervisors, as direct controller of workers have traditionally provided the interface between management and control of operations. The predominant theme in the literature suggests that
computerisation is contributing to an erosion of this traditional supervisory role by enabling a centralisation of control in the hands of management away from the points of service. An alternative, though not necessary contradictory view, is that computerisation enables the decentralization of control and enhances the role of supervisors.

Users decision structure is a measure of the degree to which decisions made by the user are programmed or non-programmed. Decisions are programmed to the extent that they are repetitive, routine, and a definite procedure exists for handling them. The rationale of selecting decision structure as a variable was based on the desire to check the concept that computer based information system will reduce information problems (i.e. users cannot access needed information, users cannot trust needed information, or users do not know which information will aid their decision process) among users. The degree to which the decisions are programmed is an indication of user information problems (Duncan 1972).

Further, the users decision environment is composed of two dimensions, simple-complex and static-dynamic. These two dimensions measure the decision maker's degree of perceived environmental uncertainty. A new computer based information system that provides additional information should affect the level of perceived environmental uncertainty that users
experience (Duncan 1972). The simple-complex dimension focus on the degree to which factors in the decision maker's environment are few in number and similar to one another. The static-dynamic dimension focuses on the degree to which factors identified by decision makers as important, to the decision processes supported by the computer based information systems remain the same or not over time.

2.7 PERCEPTION ABOUT THE SOCIAL IMPACTS OF COMPUTER:

Social scientists have long argued that computer can dramatically affect individuals, institutions, and society as a whole. Managers who introduce new work technologies have long appreciated that there will be organizational side effects. But this knowledge has had little influence on the introduction of new work technology.

In the past, considerations of human impacts of computers have led many to effort to overcome worker's resistance. These efforts have emphasised implementation methods, including communication and training, and employment assurances. They have centered on narrow factors, such as ease of learning, operators fatigue and safety. There are relatively few instances where designers have paid explicit and comprehensive attention to potential impacts on human systems.

In Europe there is a growing experience with the trade unions which have insisted on being involved in evaluating
new computer based technology before it is installed in the work place. In United Kingdom, Mumford and Wein (1979), Mumford & Henshall (1979) and Mumford & Headberg (1975) have developed a participative approach to the design of systems which affect clerical groups. Inspite of the speed and the computer technology in Japan, concern about its possible social consequences have developed later than in most western societies (Mine 1986). Though none of the empirical study has been reported in India, a number of research findings on the subject, though often inconclusive and at times even contradictory, have began to influence the thinking and policies of the government and of industrial relations people since 1980. The Rangarajan Committee Report (RBI 1984) focused its attention on banking operations, i.e. the tasks, the organisational structure of banks, and the technology, or the procedures. It failed to take into account the effects and implications of the task change on the other variable, namely, the people of the organisation. This study attempts to understand the emerging new work organisation and work behaviour of employees.