Chapter - 1

INTRODUCTION

1.1 Background

In the emerging changing global environment when countries no longer operate within their geographic boundaries, organisations have to face the challenges of competition, both within the country and from outside. In response to the challenges posed by increased competition, the globalization of business, and rapid changes in information technology, organisations continue to transform themselves (Hammer & Champy, 1993). The new organisational forms are flat, team-oriented, customer focused, and collaborative. In addition to having the requisite technical competence, working in such organisations requires new skills in the social processes of learning, sharing, and collaborating (Wheeler, 1998). The demand for employees with a new bundle of skills will have a profound impact on how we educate our managers in the next century. The information explosion and dynamic changes stimulated by the knowledge revolution have vastly increased the potential threat of professional obsolescence. In order to survive in the present dynamic environment, professionals will have to update themselves to meet the new challenges confronting them. In such a volatile environment professionals need to unlearn the old skills, knowledge, personnel practices and management techniques and relearn and update themselves with the new ones for their personal and professional development and to be able to contribute towards their own and organisational effectiveness.
The period from 1900 until the present stands apart from every other period in human history as a time of incredible change. Philosophers, historians, scientists and economists have given various names to this period. Media theorist Marshall MacLuhan (1964, 1968) called this period the Age of the Global Village. Management Consultant Peter F. Drucker (1968) has called it the Age of Discontinuity. Writer and Philosopher Alvin Toffler (1970, 1975) called it the Age of Future Shock, Economist John Kenneth Galbraith (1977) has called it the Age of Uncertainty. Whichever title is most appropriate is uncertain, but one fact is clear - this is an age of development and change. It is a period in history when change seems to have speeded up, and continues to do so at an ever increasing rate. The exponential growth of information technology which has decreased the useful lifetime of information has made the problem of professional obsolescence more severe and more widespread.

Staying abreast with new developments in one’s field therefore becomes more difficult with each passing day, and the possibility of professional obsolescence increases accordingly. Rarely does a manager take time to back off from his job and ask: “What is happening all around me? What rapid changes are occurring in business practices”? As a result, many managers paint themselves into a corner of obsolescence (Ross & Murdick, 1973).

Perhaps one of the most difficult aspects of obsolescence is the fact that it often arises over a long period of time in many subtle ways, identified as ‘creeping obsolescence’ by Mahler (1965). Also, many managers are reluctant to admit it or face up to its consequences even at a later stage. Jones (1977) found that it was only on becoming redundant that managers often admitted to the fact that they were out-of-date.
Perhaps this is not so surprising, for as managers they feel it necessary to project a positive self-image and superior performance and of course in turn, some subordinates help to reinforce this myth for various reasons some of which are not always very healthy. Managers, like others, do not want to 'lose face' in front of subordinates and so will not always admit to lack of knowledge or an inability to do something. They often hide this by becoming angry, aggressive or delegating the problem to someone else. In the study conducted by Jones & Cooper (1980), one manager put it quite succinctly, 'the way to survive is, not to make a decision on anything, and pass all matters which are potentially difficult onto someone else'. The 'buck-passing manager' is well known to most organizations but what is not often realised is the harm he can do not only to himself, but also to his subordinates and his organisation.

The human consequences of technological advancement are of much concern to modern society. However, whereas much attention is directed to the impact of this advancement on people as users of technology, little is known about its impact on people who create, develop, and work with these technologies (Bloch, 1984; Bracker & Pearson, 1986). The exponential rate of scientific and technological progress implies that knowledge becomes obsolete at an accelerated pace. Further, one can expect the skills one has to be obsolete in three to five years (Nocera, 1996). The process affects the lives of most people in this age of technology, but it has a special significance for professionals. As they are the people who create, develop, and work with technology, they need to be engaged in continuous learning throughout their careers in order to stay current. During the working years of a professional, maintaining a high level of competence is a critical issue for which the constant renewal of knowledge is a necessary condition. The unending effort to keep up-to-date requires an enormous investment of energy. Frequent adjustments are necessary, and professionals are faced with situations in which their
knowledge no longer applies. As a result, the threat of professional obsolescence is imminent in the careers of people who work in rapidly advancing fields of knowledge.

Consequent on this is the need to keep professionally up-to-date if one is to survive. Keeping up-to-date and staying competent is a full time job. Today, in the context of globalisation, opening up of the Indian economy has placed a major emphasis on service and customer satisfaction. Organisations have to work harder than before to remain competitive. Given the knowledge explosion, shrinking product-life cycles and globalisation the world is growing more complex and these pressures force professionals to focus on ever narrowing areas of business. The new information revolution began in the business sector and has gone farthest in it, but now it is about to engulf education. The center of gravity in higher education may shift to the continuing professional education of adults during their entire working lives (Drucker, 1998). Vittal (1999) opined that the most important aspect of the HRD in the 21st century is that in the age of technology and global competition, nobody can ensure lifetime employment. What is important is to have lifetime employability. This means that education and skill development do not stop once and for all when one leaves the portals of an educational institution. There must be opportunities for continuous self and skill improvement for every individual. This means that we will have to look at our entire training and education systems to provide opportunities for individuals to continuously improve their skills throughout their life. Thus, learning should become a life long activity.

Given that the competitiveness of organisations today is more determined by the knowledge (Kotler, 1985), an understanding of managerial obsolescence is imperative. It is, therefore, necessary for
managers to avoid becoming obsolete so that they continue to remain effective.

According to Pazy (1990) it is the accelerated rate of scientific and technological progress which puts heavy demands on professionals. To be able to function effectively in the world of modern technology, professionals must continuously update their knowledge and skills so that they do not stay behind and are not threatened by obsolescence. Managers and human resource practitioners need to understand how the threat of obsolescence is perceived, and what professionals actually do to alleviate this threat.

As a result of the expansion of new knowledge and the potential deterioration of previously held expertise, it is apparent that managers and professionals will be vulnerable to obsolescence once their formal professional education/training is completed. It is after that point that they become dependent on their own self-education strategies for updating, which are unlikely to be as systematic or comprehensive as those in the formal setting they have left.

With the revolutionary growth of information, rapid technological change and tremendous growth of knowledge, the subject of “professional obsolescence” is becoming increasingly important for organisations as well as society. Thus, one of the major challenges for Human Resource Development today is sustaining the faculty of human resource.

Therefore, the need to measure the obsolescence is imperative so that organisations can single out the potential obsolescents and corrective and effective measures are taken to combat professional obsolescence.
which, if not handled in time, may paralyze both – individual as well as his organization.

The right quality of people and overall resourcing are critical success factors in all organisations. Whether to achieve competitive differentiation, greater efficiency and performance or better teamwork, getting the right fit between role, competencies required and the individual is essential. But how does one minimise the associated risk of getting it wrong? It is in this context that psychological tests play a very important role to have an objective assessment of core competencies for any profession.

1.2 HRD and Obsolescence

According to Dhar (1994), managing transition in India needs more of a human resource response than a technology-oriented response. Human Resource Development is either understood as an approach, a perspective or a programme (planned and systematic way of developing human resource) with definite expected outcome (Dabhi, 1999). According to Rao (1990) HRD is a continuous process to ensure the development of employee competitiveness, dynamism, motivation and effectiveness in a systematic and planned way. The key to an organisation’s efficiency is the way in which it conserves and uses its talent. Professional obsolescence should be the concern of technical professionals, managers, and human resource specialists in any organisation whose main line of work undergoes frequent changes. If the knowledge of its employees is outdated, the organisation cannot survive. However, surprisingly enough, the human side of this problem is not granted high priority of studies of human resource management. The neglect of professional obsolescence is a risk that no management can willingly assum. It must be guarded against with vigour (Ginzberg, 1974).
An organisation should have a written policy that requires updating for its employees. Many organisations have educational assistance funds that reimburse employees who complete continuing education courses, but few organisations make continuous updating mandatory. In a research study conducted by Dubin, Alderman, and Marlow (1967) on engineers, it was found that 79% engineers reported that their companies had educational assistance programmes, but three-fourths reported that this availability had no effect in motivating them to undertake additional work. Similarly, half of middle managers said that company policy on financial aid had little effect on their decision to undertake further education. Evidence derived from these studies also indicated that taking additional course work was not sufficiently rewarded in industry and was not a requirement for promotion or salary increase. The availability of financial assistance for self-improvement is obviously not a sufficient incentive for updating in employees.

Psychological tests can be used as an aid to helping employees with their career development and thereby contribute towards Human Resource Development. Tests can be used to help gauge suitability for specific vacancies or training opportunities (such as computer programming), or can be used as part of a process of helping individuals plan their career development by providing them with objective feedback about their abilities and aptitudes, personality, values and interests.

1.3 The Changing Scenario

Trade liberalisation and globalisation of economies has transformed global economic environment. Kenichi Ohmae in his book, “The Borderless World” (1990) writes, ‘national borders have effectively disappeared and, along with them, the economic logic that made them’. Organisations, in an open environment should be able to respond to the changes in the market by innovative strategies, new products and
Introduction

processes. As Drucker (1977) puts it, “Increasingly command and control is being replaced by or intermixed with all kinds of relationships: alliances, joint ventures, minority participation, know-how and marketing agreements, in which no one controls and no one commands. These relationships have to be based on a common understanding of objectives, policies and strategies; on teamwork; and on persuasion – or they do not work at all”.

Howard (1995) opined that in the post industrial information age, the balance of work has tipped from hand to head, from brawn to brain. Workers don’t just run machines and push papers, they control information. Information is displacing capital as the essential resource for industrial success.

According to Chauhan (1999) internet may have given access to global information, but to take advantage of it information technology managers have to develop their adaptive capabilities and be change-oriented.

There are four main types of changes (Figure 1) which make demands on professionals’ knowledge and skills. These are:

1. Technological change;
2. Occupational change;
3. Organisational change; and

1.3.1 Technological Change

According to Goldberg (1999) the world of work today is a world of continuous change. This is highly visible in the form of new products being created by new methods of production. Automation alone has revolutionised organisational process, ranging from purchasing to production scheduling and control. One indication of this is the staggering
increase in the use of computers. The sheer survival of many organisations is dependent on how well they respond to change, and the efforts they expend in developing innovations. Emphasizing the importance of technology, Bhargava (2000) said that importance of technology for industry is undisputed. Till yesterday technology was the limbs, today it has become the backbone and tomorrow it will be the lifeline of the industry.

![Figure 1: Model of Changes Affecting Managers](Source: Jones & Cooper, 1980)

1.3.2 Occupational Change

This is clearly evidenced by the fact that workers in white-collar occupations with higher skill requirements now outnumber those in blue-collar jobs, many of which have been eliminated as a result of increased automation, mechanisation and productivity. Under the impact of technological change, new jobs are being created while others are being changed or eliminated. The manpower requirements of organisations are changing. Organisations prefer to hire people with requisite knowledge and technical skills. However, these employees are highly demanding and have high expectations from the organisations. They are also more assertive about their rights. In addition to higher compensation packages
they demand a better working environment. Maintaining the motivation level of such a workforce will be an important challenge for the organisations in the years to come. A better option to fill the competency gap would be to identify the potential of the existing people and retrain and develop them rather than by appointing new talent (Chauhan, 1999). As Chandra Srinivasan, Consultant, Keamey, puts it the amount spent on hiring new talent is three times more than that of retraining the existing personnel, as it takes roughly six months for a person to really contribute in a particular job.

1.3.3 Organisational Change

This is a major form of change which affects ever-increasing number of companies each year. These occur through mergers, acquisitions, development of new products, expansion of markets, especially those overseas, and the introduction of computers. Major structural changes can also be brought about by external forces such as political alliances, for example, the European Economic Community (EEC), the oil crisis of 1973 and the introduction of the European Monetary System (EMS). Planned organisational change ranging from the introduction of new management systems, various forms of organisational development programmes and the creation of new functions such as export marketing, training or R & D all play a role in most modern organisations today.

Michael Porter in his book “The Competitive Advantage of Nations” (1990) writes “Firms will not ultimately succeed unless they base their strategies on improvement and innovation, a willingness to compete and a realistic understanding of their national environment and how to improve it. The view that globalisation eliminates the importance of the home base rests on false premises, as does the alluring strategy of avoiding competition.”
We have been witnessing some changes in the work environment in the last few years which are bound to be experienced more in the coming years.

- According to Kamp (1999) changes in the organisation structure brought about by downsizing or smart sizing or say “right-sizing” which has resulted in fewer managers with more responsibilities.

- Greater emphasis on customer-orientation without which organisations cannot survive not to talk of gaining competitive advantage.

- Managers expected to possess multiple skills as against the earlier emphasis on narrow specialised skill.

- Greater empowerment of managers down the line leading to decision-making at the point of action involving greater responsibility and accountability.

Earlier the role of the manager was that of taskmaster, micromanager, enforcer and dictator but now it has changed to that of a coach, facilitator, team-builder and problem solver (Fogli & Whitney, 1998). Similarly there is also a shift in the management style from autocratic, boss dominated, command-and-control orientation to an empowering and participative style.

1.3.4 Changes in Practices

These are reflected in the widespread use of operations research and systems analysis techniques, which emphasise quantitative and computer methodology to facilitate and improve management information, decision-making and forecasting. Management techniques also increasingly utilise behavioural science findings to improve motivation and productivity, as well as provide a more comfortable working environment for all.
The effects of these changes on the professionals are enormous. For, besides having to cope with 'knowledge changes' in his own discipline, they must also cope with changes in other disciplines if they hope to maintain their effectiveness. 'Knowledge changes' alone render particular education/training programmes of little value after a short time unless the individual continues to study and acquire new learning. The concept of half-life, as used in nuclear physics, has been applied to explain the rate at which a professional's knowledge goes out-of-date. When used in this context, it is a measure of the length of time after formal education/training when a professional's knowledge is only half as relevant compared to the total knowledge in his field. In some disciplines this is considered to be as low as five years (e.g. some branches of engineering), while for others it is as high as 10-12 years (e.g. psychology). Because of this, it is imperative for professionals to engage in some form of continuing education/training in order to retain the currency of knowledge and skills to meet the changing demands of their jobs. The growth in knowledge or the knowledge revolution has been attributed to the allocation of resources to research and development, and educational activities, which together provide the basis for the production and distribution of new knowledge, somewhat like the concept already alluded to, 'technology feeding on itself'. Machlup (1962) and Drucker (1969) both use the term knowledge economy to describe the phenomenon arising from the growth of the 'knowledge industries', which deal with the production and distribution of ideas and information rather than goods and services. The rapid increase in the number of knowledge workers has resulted in a staggering growth in the production and distribution of new information, sometimes referred to as the 'information explosion' (Bennet & Weiher, 1972). The number of scientific journals alone has doubled every 15 years since they began 300 years ago. To keep abreast with newly published information, it has been estimated that 20% of a profession's working time should be devoted to reading (George
& Dubin, 1972). The implications of this are clear, for few professionals can afford to do this, and so the consequences are that ever-increasing numbers are becoming obsolete. The resultant effect of this obsolescence for managers is a decline in performance standards, affecting industry at a time when greater demands are being made on these same industries to develop and expand. How then can industry hope to survive? What can they do to rid themselves of structures or work practices that lead to obsolescence?

The abundance of technological innovation in the workplace has resulted in a rapid increase in the occupational knowledge base of the competent workforce. If this increase is not, or cannot, be serviced by the appropriate up-dating activities, then a schism emerges between the occupational knowledge/skills and the knowledge/skills that define competent performance and economic competitiveness in the organisational context. This schism broadly equates to what is called professional obsolescence (Glennon, 1999).

According to Mohan, Chauhan & Chauhan (1999) liberalization and globalization have put an end to the days of protection and captive markets for the Indian Industry. It is important that a middle-level manager understands and realizes the gravity and dimensions of this requirement, and be equipped with the necessary knowledge and skills.

Thus, in the changing management scenario middle managers will be required to take up a new role – that of a team leader, change agent and facilitator so that the strategic thinking emerging at the middle level of management is put across to the senior management and thus put into meaningful action with their concurrence (Mohan & Chauhan, 1997). Those who are able to take advantage of the challenging opportunities
and transform themselves will emerge as the managers of tomorrow, i.e., managers with a “vision” (Mohan, Chauhan & Chauhan, 1999).

1.4 Concept of Obsolescence

Individuals, like organisms following Darwin’s theory of functionalism, will survive in their jobs only if they adapt continuously to the environmental changes. An individual who fails to perceive the changes taking place around him and consequently adopt a reactive rather than a proactive approach, is undoubtedly more vulnerable to join the category of obsolescents. Failure to adapt to change would mean that the individual’s productivity declines, with obvious consequences on his future role and importance in the organization (Dhar, 1994).

Human obsolescence is associated with knowledge and skills. This is often a more subtle form of obsolescence, less easily identified perhaps, but no less important. The accelerative thrust of technological change has brought with it a growing need to keep abreast with the changes occurring in all branches of knowledge. The doctor, lawyer, manager, scientist or engineer, can no longer graduate from university and hope to perform his job effectively for the rest of his life without any further training or learning. Nowadays, continuous learning is necessary if one is to keep abreast with developments taking place in one’s own discipline.

Professional is considered to be someone whose work orientation is towards a particular field or vocation. Professional decisions are made by means of general principles, theories, or propositions which are independent of the particular case under study, and thus imply knowledge in a specific area rather than a generalized body of wisdom (Schein, 1968). The key factor in obsolescence research is the supply of suitably skilled
individuals into the workforce and the maintenance of those individuals in terms of up-to-date knowledge and skills. Whichever definition of obsolescence one chooses, the over-riding factor is the difference between what people can do and what is required of them. This section reviews the main definitions of obsolescence. Definitions of obsolescence can be classified into four categories:

- Obsolete relative to other professionals.
- Obsolete in terms of a body of knowledge.
- Obsolete as defined by job performance.
- Organisational obsolescence.

Some of the definitions are given below:

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Definitions of Obsolescence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shumaker (1963)</strong></td>
<td>Obsolescence is a reduction in technical skills resulting from a manager’s inability or unwillingness to keep up-to-date with new technological and other developments since leaving formal education.</td>
</tr>
<tr>
<td><strong>Shumaker (1963), Mahler (1965), Burack &amp; Pati (1970b), and Horgan &amp; Floyd (1971), Malmros. A.(1963)</strong></td>
<td>Obsolescence has been defined in terms of a reduction in skills or performance over time.</td>
</tr>
<tr>
<td></td>
<td>Obsolescence is divided into two categories: rustiness which results from the lack of proper use; and failure to grow and keep abreast with new developments with persistence of repetitive patterns of behaviour and the lack of sensitivity to change. Malmros associated the failure to grow and keep abreast with new developments with persistence of repetitive patterns of behaviour and the lack of sensitivity to change. He further identified five signs of obsolescence in engineers:</td>
</tr>
<tr>
<td></td>
<td>(a) the engineer became less and less inclined to apply rigorous mathematical techniques to obtain solutions to his problems;</td>
</tr>
<tr>
<td></td>
<td>(b) he encountered increasing difficulty in reading new technical papers and felt frustrated because he could not follow the mathematics;</td>
</tr>
</tbody>
</table>
(c) new technical concepts were confusing to him;
(d) new tasks and assignments began to look too difficult to be practical; and
(e) contemporaries did not seek his advice.

**Siefert (1964)**

Obsolescence is the measurement at some point in time of the difference between the knowledge and skills possessed by the practicing professional who may have completed his formal education a number of years previously, and those possessed by a recent graduate of a modern curriculum. Other writers have also contributed to the discussion such as Haas (1968), Dubin (1972) and Kaufman (1974).

**Siefert (1964), Zelikoff (1969), and Mali (1970)**

In the field of engineering, obsolescence refers to the erosion of the applicability of knowledge.

**Walter Mahler (1965)**

Managerial obsolescence is "the failure of the once capable manager to achieve results that are currently expected of him. Mahler categorized several types of obsolescence: ability obsolescence - the manager's abilities and skills are no longer sufficient for him to keep up with past jobs; attitudinal obsolescence - the manager fails to maintain flexibility in attitude and approach, changing problems and conditions; creeping obsolescence - the nature of the job slowly changes and the incumbent slowly ossifies; and abrupt obsolescence - an innovation eliminates or drastically changes a manager's job.

**Thomas Jacobs (1965)**

Management obsolescence is described as the gap between the professional's conceptual development and both his conceptual assimilation and application ability.

**Ferdinand (1966)**

Professional obsolescence refers to those whose technical competence does not embrace the farthest reaches of knowledge and technique comprising their discipline.

**Mali (1970)**

Mali developed what he called the obsolescence index (O1) in order to define the concept of obsolescence:
Current knowledge understood by the individual

\[
OI = \frac{\text{Current knowledge in the field}}{\text{Other knowledge}}
\]

For OI to remain constant with time, the denominator and numerator must change at the same fractional rate, but in reality the denominator grows exponentially in time. As the equation is based on the rate of change versus time, high rates of technical obsolescence are related to high rates of growth.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friedlander (1970; cf, Dubin, Shelton and McConnel 1974)</td>
<td>Obsolescence implies the failure of the once capable person, group or organization to achieve currently expected results. This failure, however, is not only relative to previous performance; it is also relative to the larger system of which the person, group or organization is one part. Thus we become obsolete only in relation to a larger component with a system.</td>
</tr>
<tr>
<td>Burack &amp; Pati (1970b)</td>
<td>Managers/professionals experience obsolescence where their knowledge or skills were not adequate to meet job demands.</td>
</tr>
<tr>
<td>Horgan &amp; Floyd (1971)</td>
<td>Two terms to describe obsolescence – professional obsolescence - 'refers to those whose technical know-how does not include the farthest reaches of knowledge and technique which exist within their discipline', and job obsolescence which refers to 'a situation in which the individual's knowledge is insufficient when compared to the body of knowledge that is pertinent to the specific technical tasks that he is required to perform in his current job'.</td>
</tr>
<tr>
<td>Rothman (1974)</td>
<td>Failure to acquire the new knowledge, skills and techniques which emerge in the growth of science based professions' and supplementary to this is the concurrent degeneration of the basic fund of expertise which is transmitted during the period of professional training.</td>
</tr>
<tr>
<td>Richard L. Shearer &amp; Joseph A. Steger (1975)</td>
<td>A person is obsolescent to the degree that, relative to other members of his profession, he is not familiar with, or is otherwise unfitted to apply, the knowledge, methods, and techniques that generally are considered to be important by members of his profession.</td>
</tr>
</tbody>
</table>
Managerial obsolescence is defined as the extent to which a manager’s knowledge and skills have failed to keep pace with the current and likely future requirements of his job.

<table>
<thead>
<tr>
<th><strong>Jones &amp; Cooper (1980)</strong></th>
<th>Managerial obsolescence is defined as the extent to which a manager’s knowledge and skills have failed to keep pace with the current and likely future requirements of his job.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fossum et al. (1986)</strong></td>
<td>Obsolescence occurs when the person requirements which are demanded by its tasks, duties and responsibilities become incongruent with the stock of knowledge, skills and abilities (KSA’s) which were previously congruent with job demands.</td>
</tr>
</tbody>
</table>

Some of these definitions refer to knowledge only (Mali, 1970) or skill (Shumaker, 1963; and Norgren, 1965), while others combine knowledge and skills (Siefert, 1964; and Burack & Pati, 1970b). Since skill refers to the application of knowledge which seems to be implied by these writers, then it is important for managers to have both relevant and adequate knowledge and skills if they are to work effectively. A lack of either will lead to obsolescence in terms of the job managers have to perform. It is not essential for a manager to have all the technical know-how relevant to his discipline in order to perform a particular job well, for no single job requires this breadth of knowledge and skills. Hence, Horgan and Floyd’s (1971) definition of ‘Professional Obsolescence’ appears unrealistic in terms of a professional’s work; Ferdinand’s (1966) definition refers to out-of-date viewpoints, theories, concepts and techniques, but how he defines out-of-dateness is not clear. If one examines any industry or job it is almost certain one will find a variety of theories, concepts, and techniques in practice, some more modern than others, yet, not necessarily more effective. Is the use of wheels, gears, steam, electricity etc. out-of-date? True, they are not modern, but yet we depend on them greatly for modern technology. The definition of Burack & Pati (1970b) is considered to be the most relevant which is concerned with managers and their jobs within an industrial context.
This definition then, includes that of Burack & Pati (1970b) while extending that of Mahler (1965) and encompassing Horgan & Floyd's (1971) definition of ‘job obsolescence’.

1.5 Rationale for Construction of a Test to Measure Obsolescence

1.5.1 Psychological Test

According to British Psychological Society (BPS) Bulletin:

The term psychological test refers to a procedure for the evaluation of psychological functions. Psychological tests involve those being tested in solving problems, performing skilled tasks or making judgements. Psychological test procedures are characterized by standard methods of administration and scoring. Results are usually quantified by means of normative or other scaling procedures but they may also be interpreted qualitatively by reference to psychological theory.

Included in the term psychological test are tests of varieties of: intelligence; ability; aptitude; language development and function; perception; personality; temperament and disposition; and interests, habits, values and preferences.

Properties of Psychological Tests:

According to Cronbach (1984) tests which measure performance, e.g. mental ability tests are called ‘psychometric tests’, while tests of habitual performance, e.g. personality questionnaires are called psychological questionnaires. Psychometric tests and questionnaires share the same essential properties:
• First, they tend to be objective, standardised measures - they require a highly controlled, uniform procedure for administration and scoring.

• A second feature is that the test items will be ordered in level of difficulty so that candidates can get settled into the test more easily, and weaker candidates are not faced with overly complex items early on; they have an opportunity to demonstrate what they are able to do.

• Third, psychometric tests and questionnaires are usually scored objectively as per the key.

• A fourth major determinant of objectivity and standardisation is the way in which a score is interpreted. A normative score is read from a norms table and is not open to the subjective interpretation of the tester. The most widely used normative scale is the percentile score, which is rank order scale reflecting the proportion of the reference group who obtained a lower score than the individual being tested.

• A fifth characteristic of psychometric instruments is that they should have manuals that contain scientific, objective data to demonstrate how good the test is, and to what extent it does what it is supposed to do. Two critical concepts are the test’s reliability and validity.

  ➢ Reliability refers to stability and consistency of results obtained and it can be assessed in several different ways. A good test manual will contain empirical evidence of the test-retest reliability, showing the degree of similarity between the results obtained from the first and second administration of the tests to the same sample, and also the degree of internal consistency, using the split half method. This involves comparing the scores obtained on one half of the items (normally the odd-numbered items) to the scores obtained on the other half (the even-numbered items). This figure will reflect the internal consistency of the test, ie whether or not its items all measure the same broad characteristic.

• The sixth characteristic of a psychometric instrument is that its validity has been assessed objectively. Predictive validity is regarded as the best single measure of the worth of a test.
These parameters will be kept in mind for the construction of the Professional Obsolescence Scale.

There are two main ways in which tests can be used as an aid to career development. First, they can be used by an occupational psychologist or trained personnel manager working with just one individual; the individual being counselled may agree to take a variety of tests and questionnaires and may then be counselled about the results and the implications. Such work is demanding of the individual counsellor, who needs to have a wide breadth and depth of knowledge both about tests and occupational information both within and outside the organisation. However, such counselling can be carried out in confidence and at relatively short notice.

A second approach to career development which may involve tests is the assessment centre. Initially, such centers were another form of selection, attempting to assess those individuals who had the attributes identified as being important in long-term managerial success (Dulewicz 1991). In time, however, the emphasis has changed and many assessment centres are now much more oriented to helping individuals to achieve greater awareness of their own strengths and weaknesses and subsequently making use of this information in their personal development.

Finally, tests have been used as an aid to the development of teams as well as individuals. Belbin (1981) and others have shown how work groups, put together on the basis of the right mix of personality characteristics, can perform more effectively than randomly constituted groups, even when the latter are intellectually more able.
A psychological test is equally important to diagnose the obsolescence level of a professional. This can form the basis for preventive measures to combat obsolescence before a person becomes completely obsolete and unfit for the organisation.

In India there has been a relative paucity of work done on the measurement of professional obsolescence as there is no scale available to measure the professional obsolescence in the Indian context. A search of available literature in the area of psychological instruments (Pfeiffer, 1972-99; Francis & Gower, 1982; Pestonjee, 1988, 1997; Pareek, 1998; Woodcock & Francis, 1997 and Biech, 2000) did not yield any relevant scale for measuring professional obsolescence in the Indian context. Yet there is an immense need to study obsolescence in work situation so that work proficiency may be improved. The present research is an attempt to develop a tool for measuring professional obsolescence. A scale will have to be constructed and then standardised using statistical measures like item analysis, reliability, validity and construction of norms.

The Professional Obsolescence Scale would be constructed with the basic purpose of measuring professional obsolescence in the work situation context. The data obtained through this questionnaire can form the basis for determining the level of obsolescence and the effectiveness of various updating activities. Based on this information steps can be taken, both at the individual as well as organisational level to deal effectively with obsolescence. Broadly, the objective of the study is to identify the extent of obsolescence among professionals in the organisational context and reasons thereof so that remedial measures can be adopted which can ultimately contribute towards individual and organisational effectiveness.
According to Anderson (1973) the ultimate goal of planning for career growth involves the individual assuming the primary responsibility for pursuing his own career development. This includes:

- Knowing yourself;
- Defining goals;
- Defining actions or events;
- Establishing priorities;
- Identifying barriers;
- Facilitating the career planning process by consciously reviewing and examining your needs and interests, the extent to which your goals are compatible with those of the organisation, your actions and plans, and your priorities.

The present Professional Obsolescence Scale would be helpful to professionals to assess themselves in terms of their knowledge, skills, updatedness and to what extent they are effective in terms of defining goals, defining actions or events; establishing priorities; identifying barriers; and facilitating the career planning process.

This scale would also help the organisation to identify education/training needs of their professionals. According to Saunders et al. (1974), the growth of in-company continuing education courses has been spurred on by a variety of factors such as the fact that many colleges and universities do not offer the courses required by industry or if they do, the courses are too theoretical and not applicable to industrial situations, or they are held at times which are unsuitable for employed personnel. If an organisation provides its own programmes, it can tailor them to specific company needs and hire top experts to run them at convenient times.

Tests can be used to help top managers to develop. This can be done on an individual basis or with a group of managers. Sometimes the group will be one that works together, while at other times the group may
comprise relative or complete strangers. Feedback is essential if managers are to develop in this way; whether successful or not, it gives them the opportunity to reflect on how they may be coming across to others, in terms of their test profiles, their actual behaviour, or both. Ideally, they should aim to improve their management and other behaviour, rather than use the feedback to improve the way that they come across in assessments.

To be able to effectively tackle the problem of obsolescence it is necessary that we identify some of the symptoms and causes of obsolescence. These have been covered in the next chapter.