Chapter - 2

PARAMETERS OF OBsolescence

To successfully tackle obsolescence, it is first necessary to identify some of the factors that appear, as it were, to lead to the onset of obsolescence. According to Mark (1987), concern about changing technology has been continual over history, usually increasing during periods of higher than average unemployment and abating somewhat when the economy and employment are expanding. This natural and progressional change is at the root of professional obsolescence. It can be further compounded by inappropriate or ineffective approaches on the part of the organization or the individual to recover lost ground due to changing demands on the individual. The primary cause of knowledge obsolescence is global knowledge advancement. Knowledge explosion and consequent technological advancement is at the root of all potential employee obsolescence and has consequences far beyond the lack of competence of any one individual. While nothing can be done to affect the environmental causes of obsolescence (knowledge explosion, technological advancement etc.), much can be done to investigate the job, organisational and individual characteristics associated with it. According to Lapp (2000) the knowledge base can shift anywhere, anytime, and this is one of the greatest competitive challenges for business executives.

2.1 Models of Professional Obsolescence

Researchers have tried to place the various factors attributable to the onset and avoidance of obsolescence into a systems model for a better understanding of how they act on each other and on updating behaviour. Some of the empirical models are explained here:
2.1.1 Kozlowski and Farr (1988)

This model draws on previous research (e.g. Kaufman, 1974) which centered on individual characteristics and tries to integrate them with the surrounding organisational and job context. According to Kozlowski & Farr (1988): “It is hypothesised that individual characteristics and contextual features will jointly affect individual perceptions of the job and the climate for updating. These perceptions, in turn, will relate to individual updating and performance responses. In this framework, perceptions serve to link contextual features to individual responses”. Hence, it posits that both individual characteristics and the organisational context will jointly determine the job characteristics and updating climate perceptions of the worker.

![Diagram of an integrative model of updating and performance]

*Figure 2: “An integrative model of updating and performance” (Kozlowski and Farr, 1988)*

(Solid lines depict hypothesised relationships. Dotted lines indicate relationships predicated to be accounted for by the solid lines)
2.1.2 Kaufman (1989)

Kaufman's systems model identified the key components of obsolescence by an extensive literature review combined with critical incident interviews with engineering managers (Kaufman, 1973, 1974). The proposed interactions of these components were based on relationships suggested in the research literature. Kaufman (1989) has found that all the components of the model (excluding environment, which was omitted from all calculations) were significantly corrected with obsolescence.

![A Systems Model of Obsolescence](image-url)

Figure 3: "A Systems Model of Obsolescence" Kaufman (1989)
2.1.3 *Aryee (1991)*

The objective behind Aryee's model was to examine the relative predictive strength of individual motivation and organisational factors that had been identified in previous literature as influencing the involvement of technical professionals in updating activities (Aryee 1991). Akin to Kozlowski & Farr (1988) this model is based on an interactionist framework. Individual factors were found to have a weak direct relationship with updating. Environmental variables, specifically organisational policy and interaction with peers, were found to have a significant direct effect on updating activities. All the factors had significant relationships with motivation. A significant path coefficient provided support for the assertion that motivation was a moderator between both individual characteristics and work environment characteristics.

![Diagram of hypothesised model of technical updating](image-url)

*Figure 4: “Hypothesised model of Technical updating” (Aryee 1991)*

The above models clearly distinguish two broad factors which could be considered to attribute to either the onset or avoidance of obsolescence. These are related to the individual and the organization. Factors related to individual may also include perception and motivation,
while those related to the organization may include nature of job, organisational climate and changes in the external environment.

2.2 Parameters Related to Obsolescence

Jones & Cooper (1980) have identified some parameters related to obsolescence. These are discussed below:

1. Personal Characteristics
2. Personality Factors and Achievement Needs
3. Job Characteristics and Obsolescence
4. Influence of Boss and Colleagues on Obsolescence Behaviour
5. Organisational Structure and Climate

2.2.1 Personal Characteristics

Jones & Cooper (1980) discussed in their research a number of personal characteristics which are likely to influence or affect a manager's updatedness. Some of these are: age, work experience & mobility, perception of their learning ability, attitude to importance of updating, membership of professional associations, educational & professional/technical qualifications, and, type of updating activities engaged in.

(i) Age

Age has attracted some attention as a correlate of obsolescence. Dalton (1971), Kaufman (1974), Shearer & Steger (1975), Steiner & Farr (1986), Kozlowski & Farr (1988), Willis & Tosti-valley (1990), Aryee (1991). Shearer & Steger (1975) found that obsolescence in young employees decreased until mid-thirties and increased thereafter. However, the overall picture of age and obsolescence is inconsistent.
Some studies have not found a relationship between age and obsolescence (Kaufman, 1978; Aryee, 1991); others have found a positive relationship (Dalton & Thompson, 1971) while others have reported a negative relationship (Jones & Cooper, 1980; Pazy, 1994).

Widely held age stereotypes regarding lack of motivation, resistance to change, and inability to learn (Rosen & Jerdee, 1976) may diminish older employees' abilities and desires to acquire new technological skills (Garfein, Shaie, & Willis, 1988). Lack of training opportunities (Kaeter, 1995), "underuse" of training (Sterns & Dorsett, 1994), and a significant lapse of time since formal education can cause older workers' skills to become outdated. Workers may be classified as old when their job skills become obsolete, with the risk of skill obsolescence increasing as early as the age of 30 (Sterns & Dorsett, 1994). According to Lawrence (1998) generally older people are believed to have grey hair, resist change, and/or be technologically incompetent.

Bailey & Hansson (1995) examined barriers to job changes in later life by assessing the degree to which certain age-related factors posed perceived obstacles to change. Thus, the way people view aging in a social context seems to be related to perceptions of their own selves and aging experience. According to Garfein et al. (1988); Ryan et al. (1992); and Foyck & Dorton (1994) older people cannot learn new things, adapt to new situations, or, in other words, change. However, according to Ream (2000), it is a myth that performance and productivity decrease with age. Studies have time and again proven this untrue. In fact, having older people on staff often increases the productivity of younger workers, and there is no difference in time needed to learn new computer skills, assuming a similar experience base.
(ii) Work Experience & Mobility

There are many assumptions made by managers who feel that the longer the work experience a manager has had, the more up-to-date he must be. This is not always true, for many managers with many years experience may have had these in a very limited job or company. Hence, they may be expert as far as their particular job is concerned, and even this is not always true, but they may be hopelessly out-of-date relative to colleagues in other disciplines or companies. More recently, career stage and number of years professional experience position have been suggested as more meaningful variables than chronological age (Pazy, 1996). Research conducted by Glennon (1999) revealed that mid-career engineers held different perceptions of the utility of formal updating from younger and older engineers. Specially they regarded formal courses as less useful and often perceived informal learning as sufficient for keeping up-to-date. Glennon (1999) also found that engineers with more than 10 years experience were more likely to be intrinsically motivated than younger engineers. It might be that ‘learning for learning’s sake’ could become more important for in terms of extrinsic motivators many engineers who may have reached a plateau. Glennon (1999) further revealed that engineers with 0-4 years of experience attended significantly more conferences than their more experienced colleagues with more than 10 years experience. He further found that engineers with 0-4 years of experience perceived a significantly higher climate of organisational reward for keeping update than engineers with more than 4 years experience. These young engineers also perceived a higher level of organisational support for keeping up-to-date than their colleagues with between 5-10 years of experience.

What motivates a manager to become mobile? Many reasons are given in the literature. Roche (1975) claims they are seeking ‘self-actualisation’ rather than money, Immundo (1974) indicates that it is more
to do with the high task and achievement orientation of managers for whom movement becomes an end in itself. Others say that 'travel' is the hallmark of success (Seidenberg, 1973) or as Jennings (1967) puts it in relation to top American executives, 'the manager who centers his lifestyle upon mobility is the conformist' and advocates that both he and his family learn to like this state of affairs. Ream (2000) made an observation that people who change jobs do so because they perceive that they gain greater autonomy, authority, challenge, and income. Freiberg & Freiberg (2000) opined that continued marketability is an extremely high value for today's worker. People are rewarded for periodically changing jobs because every time they change, they gain more experience and acquire new skills.

Mant (1969) suggests that mobility among managers is a response to lack of job challenge or frustration in their careers. Furthermore, Hanson (1977) indicates that this leads to a demand for more effective career development and career planning. Wool (1973) and Blood and Hulin (1967) found that when managers had low morale and were frustrated in their careers, they were forced to do something to restimulate themselves, often leading to career changes as a way of coping with the problem. However, it does not appear to be an effective way of coping with managerial obsolescence. Perhaps this is because obsolescence is a more deep-rooted problem, which requires ongoing developing, rather than a sudden job change which may not necessarily help the individual at all in terms of his/her professional growth. Maiman (1998) made an observation that in the future people will have not one, but many careers.

Literature such as the BIM report 'The Management Threshold and Men in Mid-Career' (Sofer, 1970) suggests that managers' work motivations develop with their careers. In the early career-formation stage, it appears that employees devote more time and energy to their
jobs (sometimes at the expense of their home life) and it is likely that they will be more willing to move to better their prospects. As managers move into mid-career, monetary rewards become less important as mastery of the job becomes their prime focus. Coming up to retirement there is a further change in emphasis as managers invest more of their time and energy in out-of-work activities. This may be to compensate for having reached their 'career ceiling' and tends to make them less willing to move away.

In the study conducted by Jones & Cooper (1980), they found that managers' work experience and mobility were found to be significantly related to some aspect of obsolescence, namely relevance and adequacy of knowledge, but were not significantly related to managers' skills. These results indicate that work experience and mobility are not so important in relation to managerial obsolescence.

(iii) Perception of Learning Ability

The truly successful will be those employees, managers, consultants, and corporations who boast flexibility and a high tolerance for change in their basic skill sets (Maiman, 1998). The results of the study conducted by Jones & Cooper (1980) also showed that 'up-to-date managers' had a positive perception of their learning ability, enjoyed new learning experiences and felt that their learning ability had improved in recent years. Perhaps this is because managers who feel that they are learners, or capable of learning, are more willing to engage in new learning experiences, either in a formal (course) or informal (on-the-job) setting. They will take on the challenge of new work demands. Perrucci & Rothman (1969) conclude, that 'those managers who engaged in learning experiences long into their careers were the least likely to become obsolete'. This, of course, is moving into the realm of continuous or lifelong education which Ansoff (1973) suggests is an integral part of
future management education. Managers will not longer rely solely on episodic or passive learning, but more on ‘career long’ and active/participative learning. This in turn will create new demands on management educators and trainers who in turn will be encouraged to develop new strategies or methods of facilitating learning. Goggin (1999) opined that technology has caused the need to continually update knowledge, skill and abilities (KSAs). He further observed that obsolescence occurs when the demands of the job are higher than the workers' KSAs. He suggested that to avoid obsolescence, workers must continually develop new KSAs. Goldberg (1999) observed that today the only way to succeed is to embark on a continuous learning programme. The world of work today is a world of continuous change. Goldberg (1999) further cautioned that instead of burying your head in the sand and hoping for the best, open your mind to learning everything you can about the new world of work – what it demands and what it offers. The more skills you have, the easier it is for an employee to learn more - to be cross-trained.

Some developments in this area have been made by Revans (1971); Boxer (1975); and Morris (1975a,b). Managers themselves also need to develop their own learning approaches, for as Mant (1969) indicates, they must ultimately take responsibility for their own learning. They must learn to cope with change (Toffler, 1970) and learn to benefit from their experience in a self-directed way in line with the philosophy of Rogers (1969).

(iv) Attitude to the Importance of Updating

Fischer (1996) observed that lifelong learning has emerged as one of the major challenges for the worldwide knowledge society of the future. A variety of recent events support this claim: (1) 1996 is the “European year of Lifelong Learning,” (2) UNESCO has included "Lifetime Education"
as one of the key issues in its planning, and (3) the G7 group of countries has named “Lifelong Learning” as a main strategy in the fight against unemployment. Fischer (1996) further focussing on lifelong learning opinioned that the previous notions of a divided lifetime-education followed by work are no longer tenable. Learning can no longer be dichotomized, spatially and temporally, into a place and time to acquire knowledge (school) and a place and time to apply knowledge (the workplace). Professional activity has become so knowledge-intensive and fluid in content that learning has become an integral and inseparable part of “adult” work activities. Professional work can no longer simply proceed from a fixed educational background; rather, education must be smoothly incorporated as part of work activities fostering growth and exploration. Study conducted by Jones & Cooper (1980) showed that up-to-date managers indicated that it was important to keep abreast with new developments in their particular field of interest, both to maintain effectiveness in their present jobs and also to help in the development of their careers. Without actively engaging in updating activities they felt that they would not be able to cope effectively with changes in their jobs and would be unlikely to progress their careers very far.

Handfield-Jones (2000), made an observation that talent can be bought, but the best companies develop their own. Companies develop their executives by giving them feedback, coaching, mentoring, and training but more than anything else, executives need on-the-job experience in appropriate positions. Handfield-Jones (2000), further elaborated what makes positions appropriate. Four considerations are crucial: The first is the way a job is structured: the executive who holds it should have both headroom (authority and responsibility) and elbow room (scope and variety). Organisations that are decentralized or that have many “P&L jobs” in which the holder’s decisions are linked to, and measured by, the company’s profit or loss – therefore create more
opportunities for development than organisations that do not. Second, people with high potential should move through a series of challenging jobs. Third, jobs should provide a range of challenges. Finally, executives need to learn their craft from highly skilled colleagues as well as superiors.

Vollmer & McAuliffe (1968) report that 80% of the companies in their study indicated that they experienced increasing pressure from managers to engage in updating activities in recent years. The most common activities were: university courses (90%), internal and external seminars (85%), in-house updating courses (80%) and maintaining libraries on management subjects (75%). In an AMA (1968) study of executive obsolescence, it was reported that 50% of the companies used continuing education, executive promotions, rotation and demotion to help managers keep up-to-date.

Evan (1963) and Dalton & Thompson (1971) put forward the idea of industrial sabbaticals as a useful means for helping managers keep up-to-date. This was based on the finding that engineers who completed post-graduate degrees were less prone to obsolescence than their colleagues.

As Drucker (1995) claims “knowledge has become the key economic resource and the dominant, perhaps even the only source of competitive advantage”. “Leveraging organisational knowledge is not only important” adds Drucker, “but may be the most important job, management has.” Extending this further an organization’s capacity to improve existing skills and learn new ones offers the most defensible competitive advantage of all (Prahalad & Hamel, 1990). According to Fossum et al. (1986) Aryee (1991); Corporate policy and demands can limit their functional work behaviour and prevent them from keeping upto
date. Organisational policy can positively influence updating if technical competencies are rewarded.

(v) Type of Updating Activity Engaged in

Glennon (1999) found in his research that the most popular method of updating was that of on-the-job problem solving. He further found that ‘course outside of your organization’ is at the second preference. Ranking of different updating activities is given in the following Figure:

1. On-the-job problem solving
2. Courses outside of your organization
3. Informal conversation with peers
4. Independent reading
5. In-house courses
6. Guidance from supervisors
7. Supervising juniors
8. Short seminars
9. Library-assisted reading

Figure 5: Ranking of updating activities
Source: Glennon (1999)

This finding is also consistent with that of Pazy (1996). It is important to note the general high ranking of informal method of updating when ranked against the more formal methods. (Glennon, 1999).

Research study conducted by Jones & Cooper (1980) found that participation in any of the updating activities (See Figure given below) was not significantly related to any of the obsolescence variables.
Perhaps the reason for this is that participation in updating activities in itself is not so important in terms of managerial obsolescence. It may be more important to have a positive disposition or orientation to updating. In other words, it may be more a question of engaging in lifelong education than in sporadic courses, seminars or workshops. A further point to note is the fact that the supplied list may not have been comprehensive enough or perhaps was based too much on formal activities such as courses, seminars and meetings.

Further Jones & Cooper found in their research that the most commonly practised activities for all managers were: reading work-related books and journals, on-the-job problem-solving and attending seminars and conferences. Many writers have found that on-the-job problem-solving was the most important aid in helping managers to keep abreast
with developments in their field (Margulies & Raia, 1967). Kaufman (1974) emphasises the same point from his research and goes on to suggest that if a manager’s job is not challenging and stimulating, then it should be redesigned and enriched.

The most highly rated updating activities were educational programmes that managers followed in their own time, and on-the-job problem-solving. The least helpful were attendance at professional society meetings and reading work-reading books and journals (Jones & Cooper, 1980). Aryee (1991) found that job involvement is another aspect of job factors which can facilitate updating. The Engineering Manpower Commission (1986) found that encouraging peer interactions at work was an important updating strategy. According to Dubin (1990) peer interaction facilitates updating by providing reliable information on current technical developments, by suggesting new approaches to technical problems based on their own experiences and by acting as sounding boards for new ideas.

(vi) Membership of Professional Associations

According to Jones & Cooper (1980) membership of professional associations is significantly related to obsolescence. They suggested that this is an important way of helping managers cope with or prevent the onset of obsolescence.

Rothman & Perrucci (1971) found in their research that obsolescence tends to decrease as the extent of involvement in professional activities increases. Haas (1968) found in his research that membership of professional associations is an important factor in helping managers to keep up-to-date. However, Jones & Cooper (1980) found in their research that attendance at professional society meetings is not helpful in maintaining updatedness.
(vii) Educational & professional/technical qualifications

A problem faced by all managers is that related to the currency of their educational and professional/technical knowledge. Once managers leave formal education/training, they must then rely on their own self-education strategies for updating. The trouble with these is that they are unlikely to be either as systematic or comprehensive as those they have left. This results in managers becoming increasingly out-of-date, for knowledge continues to grow at an ever-expanding rate, while their learning will tend to decrease with time. Raudsepp (1964b) explains this using the term “felt obsolescence” and indicates that although managers’ knowledge and skills might be going out-of-date, they will be influenced by the type of jobs they have. If they have a challenging job requiring the use of existing knowledge and skills, together with the development of new knowledge and skills, they will remain up-to-date longer than those who work in more routine jobs or those who move into administration.

Perrucci & Rothman (1969) reported that education and experience influence vulnerability to obsolescence. They found in the case of engineers, that those with advanced degree exhibited significantly less obsolescence than those with only a bachelor’s degree. They also found that the highest level of obsolescence was experienced by those in administrative positions, while the lowest was experienced by those in research and development positions. They also reported that limited technical responsibility increased vulnerability to obsolescence, by allowing the degeneration of existing knowledge through disuse, and failing to stimulate self-education because it was not necessary.

Jones & Cooper (1980) found in their study that the longer people study, the longer they delay obsolescence and so keep up-to-date, whereas if they complete their studies before taking up a job, then they will
become vulnerable to obsolescence early in their careers. In another study Kaufman (1974) found that highly qualified engineers who tend to stay abreast of their disciplines also progress further better than less qualified ones.

2.2.2 Personality Factors and Achievement Needs in Relation to Obsolescence

There has been little research done to study the relationship between personality factors and obsolescence. Yet, Gaudet & Carli (1957) report that personality factors have been identified as the major cause of failure among managers. Two aspects of personality have been found to be important determinants of managerial obsolescence: (1) the individual’s self-concept (Kaufman, 1974), and (2) responding to uncertainty (Shearer & Steger, 1975). Another personality variable tested by Aryee (1991) was locus of control. When managers learn that they can effectively master the challenges of their environment, feelings of competence, self-esteem, and confidence emerge as integral parts of their self-concepts (Hall, 1971). The converse is also true in that, those who fail to master their environment experience feelings of low competence, low self-esteem and low self-confidence. An individual’s self esteem will influence both his occupational choice and his level of career success. Kaufman (1974) also indicates that it will influence his attitude and behaviour towards keeping up-to-date, which in effect influences his vulnerability to obsolescence.

Kaufman (1974) has found that professionals who begin their careers with high self-assurance are significantly more satisfied with their attainment of professional aspirations and recognition, as well as management aspirations, later on in their careers, than those who have low self-esteem. This predisposition to career growth/success is thought to play an important role in determining whether or not professionals
become obsolescent. The professional who sets out with a positive self-concept will be likely to take on new challenges, seek diversity of work, and broaden his skills early in his career. Thus, success leads to more success, and so he progresses up the hierarchical ladder with little difficulty. On the other hand, the professional with low self-esteem will more likely take on familiar jobs, not take risks and so not broaden his skills, thus leading to stable, but unprogressive, career. He is likely to avoid 'updating activities' for fear of failure and hence become susceptible to obsolescence. This then leads to greater doubts about his abilities and hence a greater desire to protect his job at the expense of development - a destructive obsolescence feedback loop, a vicious unending circle.


Another important characteristic associated with obsolescence is rigidity, which can impair a manager’s ability to cope with change (M. Kinnon, 1962). This is often exemplified in managers who try to cope with change by ignoring it or continuing to use old, out-of-date procedures to deal with it. Some executives have identified this reluctance to change as an important factor contributing to obsolescence. The opposite of this is openness to new ideas, originality and creativity. These are associated with flexibility and ability to take change in one’s stride.

A further factor which has been found to influence managerial susceptibility to obsolescence is intelligence. In fact, Kaufman (1974) goes so far as to state inadequate cognitive ability is the most important personal characteristic that predisposes a professional to obsolescence.
His research indicates that the higher a manager's intellectual ability at the outset of his/her career, the more likely s/he is to keep up-to-date. Those with low intellectual ability tend to go into jobs which do not demand a high level of cognitive skills. This often leads to lack of use, resulting in a negative perception of their own learning ability. This, of course, tends to frighten professionals from attending courses or seminars for instance, and so they rapidly go out-of-date and become obsolescent.

(i) Achievement Motivation

Achievement motivation is another factor which appears to influence susceptibility to managerial obsolescence (Rothman & Perrucci, 1971; Hall, 1971; Dubin, 1972; Kaufman, 1974; Levene, 1976; and Reeser, 1977). According to Levene (1976) those managers with high achievement needs will tend to move into dynamic growth orientated organisations and will constantly seek new challenges and goals. Those with low achievement needs will tend to gravitate towards more structured organisations such as government bodies or large multinational companies.

Achievement need also effects obsolescence in that managers who have a high need to achieve are more likely to remain up-to-date than those with the opposite. Need achievement is well documented in the work of Maslow (1943); Hertzberg et al. (1959); and McGregor (1960). When a manager starts out in his career he has a high need to establish himself securely, and to make a mark in the organization. Later his needs shift to esteem and achievement. The stronger these are, the less vulnerable he is to obsolescence, because he is more dependent on his own skills, is willing to take risk, assumes greater responsibility for decision-making and seeks opportunities for growth. When these needs are satisfied, the manager may then move to satisfy higher order needs by getting involved in professional association, local politics, community
Parameters of Obsolescence

services, etc. Managers’ goals also change with time during their careers. It has been found, for instance, that some managers when they embark on their careers have a desire to achieve higher academic or professional qualifications, while others’ goals are to progress up the hierarchical ladder. Those who are interested in professional goals are known as ‘cosmopolitans’, while those interested in organisational goals are known as ‘locals’. Kaufman (1974) has found that ‘cosmopolitans’ are generally less obsolescence prone than ‘locals’. This is because they seek to keep up-to-date with changes in their profession/discipline, while ‘locals’ are more concerned with organisational matters and hence let their professional skills get out-of-date. Goals, of course, change over time with career progress, so that there may be changes in emphasis from ‘cosmopolitan’ to ‘local’ or vice versa, at different stages in an individual’s career. Indeed, a single individual usually has a mixture of goals to start with; it is the emphasis placed on them that tends to distinguish one manager from the other. A study by Ritzer & Trice (1969) on personnel managers found that because personnel administration, as an occupation, is part bureaucratic and part professional, they are committed both to the occupation and the organisation. In other words, personnel managers supplement their commitment to the occupation with some degree of commitment to the organisation.

A number of studies indicate that managers who have a large amount of energy available for their work, tend to use it on their careers as well as intellectual pursuits to keep up-to-date (Kaufman, 1974).

2.2.3 Job Characteristics and Obsolescence

Jones & Cooper (1980) found that the nature of the managerial role suggests that at least some of the variation in the process of becoming obsolete might have its genesis in the alternative career paths chosen by individuals. For example, if an individual enters an administrative position
it is likely to render him more vulnerable to obsolescence, as he will have less time for updating technical knowledge than if he entered a teaching or research career. This was also the finding of Rothman & Perucci (1971) who reported that the highest levels of obsolescence were experienced by those in administrative positions, while the lowest were experienced by those in research and development positions. They conclude that obsolescence tends to decrease as the extent of involvement in professional activities increases. They also report that limited technical responsibility increases vulnerability to obsolescence by allowing the degeneration of existing knowledge through disuse, and failing to stimulate self-education because of the minimal expectations of such positions. Role performance, when differentiated in terms of function, also requires different amounts and types of knowledge and expertise. For example, the demands of research and development personnel are qualitatively different from those in production or sales etc.

Norgren & Warner (1966) report that research and development personnel must be conversant with the newest knowledge and skills in their field in order to maintain high performance, while for other activities it may not be as important.

(i) First Job Experience

There is increasing evidence to suggest that a manager’s first job is a crucial determinant of later job performance and vulnerability to obsolescence (Jones & Cooper, 1980). Kaufman (1974) found that the challenge and demands experienced during the first year of work by newly-hired college graduates tended to have a greater influence on eventual performance and career success than did the challenge and demands of succeeding years. This involved the degree to which new managers were expected to utilise their knowledge and skills, use new methods, solve novel problems, apply their learning capacity, become
involved in self-development, commit their time and energy and demonstrate initiative. On the other hand, managers who have limited work challenge are likely to become frustrated, lower their aspirations, or perhaps leave the organisation. The results of the Kaufman’s (1974) Bell Systems’ management study are summarised as follows:

1. Of those who voluntarily left the company early in their career, 55% did so because of unchallenging work;
2. Of those who had been highly challenged by their early work experience, 70% increased their motivation to achieve, compared with only 8% of those with unchallenging assignments;
3. There was an increase in concern for really accomplishing something, as distinct from advancement or making more money, among those who experienced challenging jobs early in their career, whereas there was a decrease in desire for accomplishment among those who experienced low initial work challenge.

Jones & Cooper (1980) revealed in their research that although it has been demonstrated that first jobs play a major part in a manager’s future career, it does pose a dilemma for organisations because they are very often reluctant to assign a difficult job to a newly-recruited manager for fear of failure. This could have serious consequences both for the organisation and the individual manager. Much of this reluctance is also based on the inexperience of the new recruit, yet unless he is given some realistic assignments he will continue to remain inexperienced. Perhaps this is related in some ways to the developmental stages of child development as identified by Piaget (1953), where there is a distinct series of stages that a child goes through from birth to maturity. During the process of maturation, there is no point in trying to teach certain cognitive or motor skills unless the child has reached a stage of development capable of comprehending them. In the case of management, it is often felt that there is no point in giving managers certain tasks until they have reached a level of ‘maturity’ which would allow them to carry them out effectively.
Parameters of Obsolescence

Hall (1971) found in his study the some difficulties faced by new recruits are that their skills and abilities are not being used, they do not know how to create challenge in their jobs and they are often perceived as a threat to superiors. Newly recruited managers often possess high levels of skills and abilities, having recently completed advanced educational and other training. They are usually fully aware of up-to-date techniques and anxious to apply them in their new jobs. The organisation, on the other hand, has established procedures for doing things and tends to resist innovation. The young manager has often got false aspirations as to his abilities, and when he comes in contact with his superiors he feels that they are behind the times and incompetent because they do not recognise his 'worth'. Because he often does not know how to create his own challenges, he must rely on his superiors and the organisation to give them to him. When they are not forthcoming, he gets frustrated. This reliance on others is due to the fact that he is accustomed to being given challenging projects in schools or university and not creating them for himself. Indeed, research has shown that people tend to be rather passive about even major career decisions, the type of organisation they work for, whether or not to change jobs, and the type of jobs they should accept (Roe & Burach, 1967).

(ii) Frustrations of Older Managers

Schein (1968) pointed out in his research that new managers are often a threat to their superiors because of their advanced knowledge and this is probably a major contributor to the syndrome of unused potential. According to Dalton et al. (1977), another aspect of this threat is the fact that the superior may be in a terminal position, or frustrated in his attempts to keep up-to-date, and is now confronted with this 'whiz kid' who is full of ideas and anxious to impress everyone and leave his mark. They further explained that a problem arises because of the high starting salaries available to new recruits. These are generally much higher today
than they were when the superior first began his career and this can be an additional source of resentment. From a more positive point of view, there is evidence to suggest that if the superior is in a secure position and not far from retirement (hence with little to lose), he may take the new recruit under his wing and act as a mentor to help him adjust to the organisation (Dalton et al., 1977). Unless this positive approach is taken by the superior there may be a change in his self-image, attitudes, aspirations and motivation in a negative direction. He may become less optimistic about succeeding within the organisation (Campbell, 1967). He may see himself as having less impact on the organisation, and so his values may tend to conform to those of the organisation (Schein, 1967).

(iii) Technological Change

A major factor affecting managers' ability to keep abreast with new developments is the rapid technological changes occurring in industry at all levels. Fox (1965) in his article on 'personal obsolescence', identified automation and cybernetics as two factors most instrumental in causing technological change. These factors have become even more evident in recent times with the move towards capital-intensive industries, resulting in higher rates of unemployment and redundancies at both management and other levels (Hartley, 1978 and Jones, 1979). Fox (1965) further explained the following given three fears associated with these technological changes:

- That automation and cybernetics will do away with many jobs and so swell the numbers of the unemployed;
- The computer will become so intelligent that it will replace man; and
- That many cannot adapt themselves to the radical changes happening at an ever-increasing rate in technology.
Crossman (1960) is of the view that the extent of obsolescence is affected not only by the rate of technical change, but also by the relative state of technological refinement or degree of automation. This is evidenced in Mam & Heffernan’s (1960) study of power plants where it was found that:

...97% of the employees reported that their jobs required more training now than earlier, ..., jobs were perceived by the men to be ones with increased responsibility requiring greater degrees and amounts of training than did their older jobs.

At the management level, Barrett et al. (1971) indicated a clear awareness by personnel of the need for their own educational upgrading. Brady (1967) pointed out in his research that the impact of computer technology is directly felt by middle managers in particular. This is because they work directly with the computer and use computer information frequently to analyse and identify problem areas, in addition to evaluating alternative courses of action which might be used by their superiors.

According to Miller (1972), further problems faced by managers which can lead to obsolescence are:

- When an expert is used over and over again in a narrow specialism, thus giving no scope to develop or expand his knowledge or skills;
- Job pressures can ‘burn out’ an employee in his productive years, with little time allowed for refurbishment and growth until it is too late;
- Work priorities can interfere with the employees’ educational commitments; and
- Employees may become over-committed to the job or organisation at the expense of family life and outside interests, thus leading to a narrowing view of life and work which can often ‘blind’ them to the need for change or updating in their careers.

Jones & Cooper (1980) in their research examined the four variables in relation to managerial obsolescence. These are: (a) Management function; (b) Level in hierarchy; (c) Decision-making
responsibilities; and (d) Challenge of job. The results of the research are given the following Figure:

<table>
<thead>
<tr>
<th>High Obsolescent Managers</th>
<th>Low Obsolescent Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function:</td>
<td>Function:</td>
</tr>
<tr>
<td>• Production</td>
<td>• Finance</td>
</tr>
<tr>
<td>• R&amp;D</td>
<td>• Personnel</td>
</tr>
<tr>
<td>Level - Middle/Junior</td>
<td>Level - Senior/Board</td>
</tr>
<tr>
<td>Not involved much in decision-making</td>
<td>Major decision-making responsibilities</td>
</tr>
<tr>
<td>Unchallenging job</td>
<td>Challenging job</td>
</tr>
</tbody>
</table>

Figure 7: Job Characteristics and Obsolescence
(Source: Jones & Cooper, 1980)

(a) Management Function

Jones & Cooper (1980) found Management function to be significantly related to managerial obsolescence. The most up-to-date managers were those in Finance, followed by Personnel, Production and R&D as explained below:

- Financial managers tend to study longer into their careers than other managers;
- They are more likely to belong to professional associations and the associations they do belong to tend to provide a better service for their members than other associations;
- When one looks at the daily papers there are always many pages dealing specifically with finance (e.g. Financial Times), while there is little written on a daily basis about other aspects of management;
- What goes on, or happens in a company, ultimately costs money and so the financial managers will be aware of it;
- Financial managers tend to have the greatest influence on company policy and must be in touch with all aspects of the company.

*Personnel managers* rated themselves the second most up-to-date groups. Some reasons put forward to explain this were:

- Personnel managers often have degrees and so are better educated than many others;
- They tend to study well into their careers in order to become members of the Institute of Personnel Management;
- They often hold responsibility for training and so are aware of the importance of continuing education/training and what is available in the way of courses, seminars, conferences etc.;
- They have a need to keep in touch with all aspects of their companies because of recruitment and industrial relations requirements.

*Production Managers* rated themselves second highest on obsolescence. The reasons were:

- Production managers generally come from poor educational backgrounds, having left school early to take up apprenticeships;
- The lack of formal education tends to make them shy away from formal learning situations because they have a poor perception of their learning ability;
- They are generally well skilled in handling machinery and do not feel the need to attend training courses;
- They are often unaware of new techniques such as production scheduling and control, materials handling and streamlining production process;
- There are not many courses available for production managers, and those that are, tend to be too general;
- They are not likely to belong to professional associations;
- Their work tends to be mainly routine.
R&D managers rated themselves the most obsolete of all four functions. The reasons given to explain this were:

- R&D managers are aware of the volume of literature and material published each year in their particular field of interest. However, since they cannot possibly hope to read it all, they conclude that they must be missing out on important developments. This may not be necessarily true, but they often do not realise it; because they cannot read everything, they feel that their knowledge is out-of-date;

- They often tend to specialise in very narrow fields of interest and thus lose touch with other areas within their disciplines;

- They generally take a long time doing a narrow piece of research which allows them little time to devote to other matters;

- They have a tendency to remain isolated from other areas of their companies and do not get involved much in policy matters.

(b) Level of hierarchy

According to Jones & Cooper (1980), the hierarchical level of managers was significantly related to only one aspect of obsolescence. The results of their study indicated that the more senior the managers, the more up-to-date they rated themselves. The reason for this may lie in the fact that the more senior the managers, the more challenging they found their jobs. The more senior they were, the more important their decisions were in relation to both their functions and their companies. They further explained that in addition to the above reasons, senior managers were also older, more likely to be qualified in finance, have the most management experience, and to have worked outside the country and at a management level. All these factors when taken together seem to be quite important, whereas individually they may not be so.

Dalton et al. (1977) indicate that as a manager gets older he tends to be more willing to take risks and is less concerned with security,
particularly as he gets closer to retirement. The finding that older senior managers were less obsolete than younger junior/middle ones has important implications for the future of their companies. If young junior/middle managers feel that they are obsolete then the consequences of this for their own careers as well as for their organisations are serious. This is especially so, since they are the ones who are in direct contact with technological changes. Whether in fact they are the most obsolete is difficult to say, but if they are, then there is a great need to tackle obsolescence at this level. The answer may lie in the fact that junior and middle managers may be under-utilised in terms of their ability. This has been found to be an important factor demotivating managers to keep up-to-date (Hirch, 1958; Kornhauser, 1962; Raudsepp, 1964a; and Ritti 1971b). This is because under-utilisation leads to loss of job satisfaction, frustration and lack of motivation to update, which reinforces the argument that senior managers should be aware of the importance of assigning challenging jobs to their subordinates (Kaufman, 1974).

(c) Decision-making responsibilities

In the study conducted by Jones & Cooper (1980), functional decision-making was found to be significantly related to most aspects of obsolescence, while company decision-making was significantly related to all obsolescence variables. These results corroborate the findings of Raudsepp (1964a), and Kaufman (1974), both of whom indicate that decision-making responsibilities were important in relation to career challenge and hence influenced managerial obsolescence. If managers make important contributions to their companies, then they are more likely to be listened to and so influence the future of their companies. This in turn will probably have the effect of giving them greater job satisfaction and lead to the realization of higher order personal needs such as enhanced self-esteem and possibly self-actualisation (Maslow, 1943). If, on the other hand, they are not listened to, they are unlikely to contribute
as much to their company, become dissatisfied, and thus vulnerable to obsolescence.

(d) Challenge of job

Challenge of job was also found to be significantly related to most aspects of obsolescence. The related variable of, 'the extent to which managers' jobs utilised their professional skills and abilities', was likewise significantly related to obsolescence (Jones & Cooper, 1980). These results are consistent with the findings of Raudsepp (1964a), Ritti (1971b) and Kaufman (1974), all of whom indicate that job challenge is a major factor in keeping managers up-to-date. The misutilisation or under-utilisation of managers was found to result in frustration and dissatisfaction (Kaufman, 1974).

2.2.4 Influence of Boss and Colleagues on Obsolescence Behaviour

(i) Relationships at Work

According to a study of almost 800 people who had experienced incivility at work, conducted by the University of N. Carolina at Chapel Hill's Kenan-Flagler Business School, Pearson (2000) found that rude behaviour can affect employee productivity in a number of ways. "There is less dedication and people stop going that extra mile." Worse still, "employees tend to take out their frustration on the organization, not the instigator". Dubin (1972), found that one of the chief situational determinants for motivating managers to update themselves is the behaviour of their supervisors. Supervisors were not found to be assisting their subordinates' growth and development in a study of engineers carried out by Dubin & Marlow (1965) and of managers by Dubin, Alderman and Marlow (1967). Almost two-thirds of 2,090 professionals engineers reported that their supervisors took a non-committal attitude
towards their further education and development. Similarly, 51% of 3,600 managers reported the same attitudes on the part of their superiors. These were the findings of another study carried out by the US National Science Foundation (1969), which found that about one-third of the scientists and almost a half of the engineers interviewed, reported attitudes of non-interest on the part of their superiors. In another study, Landis (1969) asked managers ‘How does your immediate supervisor feel about further job-directed education or training?’ Fifteen per cent reported ‘very encouraging’; 47% ‘somewhat encouraging’; and 37% ‘not encouraging at all’. He thus concluded that:

It is the immediate supervisor that counts in the development of subordinates. If a boss does not encourage a man, he will not take further course work...unless the supervisor is willing to encourage and accommodate his men in spite of the possible interference with his work schedule, few men will undertake continuing studies.

Locke (1970) concludes that the supervisor aids in the motivational process by helping the subordinate to specify his goals within the context of his job and ensuring that the facilities exist for the subordinate to update his skills and to realise his goals. This takes the supervisor out of his traditional ‘regulator role’ and into that of developer and facilitator of subordinates’ motivational potential.

The National Science Foundation (1969) provides further evidence of the key position occupied by the supervisor. Three types of supervisors were identified:

- the innovator;
- the administrator; and
- the inactive supervisor

- The innovator tries to create new opportunities in addition to existing ones, to provide novel and interesting ways for subordinates to undertake continuing education.
The administrator conceives of his job as implementing organisation policies and encouraging subordinates to use existing resources for self-development.

The inactive supervisor is passive and non-committal in his attitudes. He conceives self-development as a responsibility of the employee apart from the working environment. He neither stimulates subordinates to pursue additional knowledge nor initiates continuing education on their behalf.

According to Jones & Cooper (1980) a further role that supervisors could play is that of a coach. This entails telling the subordinates what they should know and what is expected of them, and the results they are expected to achieve. They are then given tasks to help their development, and feedback is provided to ensure that they know how they are doing. They should be given guidance and assistance when needed, and rewarded or penalised on the basis of results. Hinrichs (1966) describes this type of coaching as a direct expression of two basic employee development principles: '(1) most employee development occurs on the job, and (2) personnel development must be a line-management responsibility'.

According to Dubin (1972), one of the main determinants for motivating managers to update was the influence of superiors. Most studies to date indicate that superiors are not good at encouraging their subordinates to update (Dubin & Marlow, 1965; Landis, 1969). Landis (1969) suggests that unless a manager is willing to encourage and accommodate the development of his subordinates, few will undertake continuing studies.

However the results of a study by the National Science Foundation (1969) suggest that it is very much up to the individual to look after his own updating and, in fact, the low obsolescent manager is one who does this irrespective of any assistance from his supervisor or indeed any help from his organisation. Although many writers comment on the importance
of the supervisor, and talk about the theoretical role he plays in coaching his subordinates (*Hinrichs, 1966 and Dalton et al., 1977*), the most important factor is how individuals view themselves and take responsibility for their own updating (*Mant, 1969*). *Miller (1972)* puts it in a different way. ‘The emphasis by management on the importance of personal growth and human vitality seems to result more from what management does than what management says’.

### 2.2.5 Organisational Structure and Climate and Professional Obsolescence

**(i) Organisational Climate**

Organisational climate refers broadly to an individuals perception of management philosophy (*Dubin, 1990*). The use of climate measures has received much attention in organisational research (*Guion, 1973; Hellriegel & Slocum, 1974; Lawler, Hall and Oldham, 1974; Gavin, 1975; and Newman, 1975*). The organisational climate assumes that individuals within a given subsystem should have similar perceptions about their climate (*Hellriegel & Slocum, 1974*) and yet there are arguments that climate is primarily subjective and perceptual (*Kozlowski & Hults, 1987*). Organisational climate can be defined as ‘organisational and management practices that influence motivation, condition attitudes, and shape behaviour on the part of its members’ (*House & Rizzo, 1971*). In reference to this, *Dubin (1972)* notes that some professionals are made obsolete by the organisation in which they work. They are kept obsolete by unstimulating work and by the limited demands and rigid controls that prevent them from enlarging the scope of their work. *Hesseling (1971)* states that ‘...organisations must create a challenging environment for inquisitive and speculative members who feel themselves deeply rooted in the organisational reality’. A suitable organisational climate is essential if it is to provide the kind of work environment conducive to keeping managers
up-to-date and preventing the onrush of obsolescence. According to *Dunette & Campbell (1968)* a high organisational climate is said to emphasise the following characteristics:

- Achievement orientation
- Concern for excellence
- Problem solving emphasis
- Training opportunities
- Atmosphere in the organisation

*Campbell & Beatty (1971)* have given the following characteristics to keep the professionals up-to-date:

- Achievement - a desire of the group to do a good job and contribute to the performance of the company.
- Concern for Excellence - degree to which the group is concerned with improving individual performance, being flexible, innovative and competent;
- Problem-Solving Emphasis - extent to which group anticipates and solves problems related to group functioning;
- Reputation - organisation reflects status and reputation of individuals' work group compared to other work groups;
- Training Opportunities - degree to which the organisation provides training for individuals;
- Atmosphere - degree to which supervisors generate a supportive and friendly atmosphere;
- Initial Job Orientation - individuals are informed of what to expect when they first start on the job.

It is widely accepted by researchers in the area that an organisational climate for innovation and updating is a key factor in the maintenance of a competent and up-to-date workforce. (*Pelz & Andrews, 1966; Kaufman, 1973, 1974; Kozlowski & Hults, 1987; Dubin, 1990; Pazy, 1996*). Kozlowski & Hults (1987) concluded that the concept of climate provides a useful framework in which the factors which facilitate updating can be better understood. *Kozlowski & Farr (1988)* stated that
organisational climate serves as a global measure of one's interpretation of the favourableness or otherwise of the work environment in encouraging updating behaviour. Furthermore, Pazy (1996) was able to establish the importance of organisational climate and also found that there is greater perceived organisational support for updating at later career stages.

If employees are to expend the necessary energy to remain competent, the organization must be committed to professional development. Continuing professional development must be an integral part of the organisational culture at every level of the hierarchy (Sterns & Dorsett, 1994).

(ii) Adaptive and Non-adaptive Organisations

According to Margulies & Raia (1967) an adaptive organisation is most conducive to individual professional growth. ‘The adaptive organisation is one which is flexible and resilient as it responds to feedback from the environment’. Such an organisation is experimental and ‘free to change’, without rigid conformity to traditional patterns of operation. When being experimental is rewarded, and failure actually becomes part of the learning process, then the organisation is innovative, i.e. more creative in response to tasks. Too often, however, organisational objectives become paramount, so all-pervading that individuals are lost and absorbed in a maze of procedures and rules. Nurturance, on the other hand, reflects the concern of the organisation for the professional growth and development of each individual. When the organisational climate can be described as open and the emergent character has a high degree of experimentalism, innovativeness and nurturance, the result is a ‘healthy’ and highly creative organisation - one in which individual motivation and, hence, individual activities contribute to the effective and efficient accomplishment of organisational objectives.
In contrast, the ‘non-adaptive organisation is insensitive to its environment and because of rigid conformity to traditional patterns of operations, as well as the existence of many organisational constraints and restrictions, it is inflexible and unchanging’. Since the climate discourages experimentation, the risk of failure is prohibitive. Thus, the concern of the organisation is focused on its task or mission, rather than on the need for individual growth and development. It is ‘unhealthy’ in that there is a low degree of experimentalism, innovativeness, and nurturance in the climate. Consequently, individual motivation and creativity are suppressed and the result is something less than the accomplishment of total organisational objectives.

From an individual manager’s standpoint, what he wants is job satisfaction more than security and money. He wants the opportunity for growth in his career; to be able to learn from experience and expand his knowledge and skills. Managers today have career questions they want answered and without these answers, frustration sets in, which leads to morale problems and low productivity (Blood & Hulin, 1967; Wool, 1973). The response of some managers to this is to resign and change jobs and hence, mobility is used as a vehicle for updating (Mant, 1969). This in turn leads to a demand for effective career development and career planning programmes (Hanson, 1977).

(iii) Misutilisation & Underutilisation

Two major causes of managerial job dissatisfaction are what Kaufman (1974) calls ‘misutilisation’ and ‘underutilisation’. Misutilisation is greatest when managers experience light intellectual demands in their jobs together with heavy time pressures. It results from managers working under time pressure at assignments so routine that could and should be done by clerical personnel. This is confirmed by Ritti (1971a)
when he states that the two most important causes of obsolescence among professionals are:

1. Work assignments that do not require knowledge of the latest developments; and
2. The pressure of work that leaves no time or energy for study.

Jones & Cooper (1980) revealed in their research that three out of four engineers who reported considerable misutilisation in their work have a problem keeping up-to-date with new developments. On the other hand, over half of those who feel that misutilisation is not a problem report having no trouble keeping up-to-date.

Underutilisation is similar to misutilisation in that it involves only light intellectual demands on the job, but the underutilised individual has light rather than heavy time demands. This tends to occur frequently at the outset of a professional's career. It results in little job challenge which could be a great danger to the new employee's development.

(iv) Top-Heavy Organisation

A further case of obsolescence occurs in what Reeser (1977) calls 'top-heavy organisations'. Drucker (1971) maintains that corporations are unrealistically adding 'layers of vice presidents', and that there is too much emphasis on building and maintaining hierarchical systems. Moreover, he finds that corporations are overstaffing with young, educated employees, and providing plenty of promotion steps for their early careers. However, these opportunities become severely limited at some midpoint on the ladder, with the result that many individuals in their 30s become stranded in bureaucracies, and the inevitable stagnation leads ultimately to obsolescence.
Penzer (1973) notes that managers can avoid detection by 'building empires', thus deluding their superiors into thinking they are performing a worthwhile service. Eventually, however, these empires spawn their own obsolescence and, inevitably, managers who are not contributing to the development of the organisation will become costly liabilities.

Another aspect of obsolescence is that affected by organisations' bureaucratic systems, and mis-management by top executives (Berkwitt, 1972 and Tarnowieski, 1973).

(v) Company size

Research conducted by Hannan & Freeman, 1984; and Kelly & Amburgey, (1991) found that old and large organisations tend to be inert and unlikely to change. Jones & Cooper (1980) found in their study that the larger the organisation, the higher the level of obsolescence. They mentioned that this was an unexpected finding, for the reverse was hypothesised, because it was felt that larger companies would have more facilities and resources available to help managers keep up-to-date.

(vi) Company policy on updating

Kozlowski & Hults (1987) found in their research that a climate that is supportive of activities relating to updating is more likely to discourage professional obsolescence. Kozlowski & Hults (1987) hypothesised that the facilitation of performance and updating activities to prevent obsolescence is thought to require the development of a congruent organisational climate. Furthermore, they concluded that organisations must develop strategies that will foster continual knowledge and skill updating among their incumbent technical professionals. Research conducted by Jones & Cooper (1980) found a high correlation between obsolescence rating and presence or absence of a policy for updating staff, but it was not statistically significant.
Many writers indicate that managers must be given stimulating jobs if they are to be encouraged to update (Kaufman, 1974; Van Atta et al., 1970; and Hall, 1971).

(vii) Company policy on career planning

The results of the Jones & Cooper's (1980) study show a significant relationship between the presence of an organisational policy on career planning and managerial obsolescence.

Dubin & Marlow (1965) found that 79% of engineers in their study reported that their companies had educational assistance programmes, but 74% reported that this availability had no effect on motivating them to undertake additional work. Similarly, 49% of middle managers said that company policy on financial aid had little effect on their decision to undertake further education (Dubin, Alderman & Marlow, 1967). Further, evidence derived from these studies indicated that taking additional course work was not sufficiently rewarded in industry and was not a requirement for promotion or salary increase. Rothman & Perrucci (1971) found that when attendance at professional activities was rewarded by organisations, it was not associated with low levels of obsolescence.

(viii) Rewards for high management performance

Specific interest has been shown in the role of organisational reward policies and organisational reward climate in encouraging employee participation in professional development (Kaufman, 1974; Steiner & Farr, 1986). Kaufman (1974) also opinioned that if a professional sees that his efforts in self-development are not rewarded by the organization, the greater the likelihood that they will become obsolete. Jones & Cooper's (1980) revealed in their research study that rewards for high management performance were found to be significantly related to
managerial obsolescence. Thompson & Dalton (1976) suggest that rewards are designed as an incentive to engineers in R&D organisations to move into management and away from technical work. Horgan & Floyed (1971) indicate that the type of rewards which are important to managers include the opportunity to use newly acquired knowledge and skills, promotion and an increase in personal security. Rand (1977) suggests that before any reward system is developed, organisations should examine what types of rewards are most appropriate and what they should be given for, in addition to ensuring that they are equitably distributed amongst staff. The main emphasis should be on treating managers as individuals and rewarding them accordingly for work well done (Lawler, 1974).

(ix) Encouragement of innovation

Innovative behaviour is a strategic activity by which organisations gain or lose competitive advantage (Von Hippel, 1988; Jelinek & Schoonhoven, 1990). Study conducted by Jones & Coopers (1980) proved that encouragement of innovation among managers was significantly related to obsolescence. In their research they also found that job challenge and encouragement are not very highly correlated.

A number of writers indicated that innovation is important to keep managers stimulated (Dalton et al., 1977). There are a number of ways of encouraging this, such as giving managers new problems to solve, job rotation, secondments and working on task-forces to deal with short-term emergencies. Van Atta et al. (1970) suggest that companies plan effective management programmes in order to maintain the technical vitality of their staff. This ensures that company problems are creatively dealt with. Such companies are characterised by ‘high productivity, excitement and sense of purpose’ (Miller, 1972).
(x) Organisational response to change

According to Jones & Coopers (1980) organisational response to change was found to be significantly related to obsolescence. Rothman & Perrucci (1970) indicate that managers employed in industries characterised by rapid technological change acquire a greater amount of new knowledge than do those who work in less dynamic environment. It was also found that the incidence of obsolescence was found to be less for managers in companies that experience a high growth rate. But the results of the research by Jones & Coopers (1980) appeared to be at variance with these reports. Perhaps the reason for this lies in the fact that some managers can be assigned to routine work roles with little variation even in dynamic organisation (Kaufman, 1974). Thus, the actual work roles that managers occupy can have an influence on their obsolescence over and above that of the organisations in which they work.

It would be pertinent to mention here that the Professional Obsolescence Scale (POS) has been constructed taking into account the parameters related to obsolescence mentioned earlier in this chapter viz; Personal Characteristics; Personality Factors & Achievement Needs; Job Characteristics; Influence of Boss & Colleagues; and Organisational Structure & Climate.

2.3 Causes and Correlates of Obsolescence

To be able to effectively tackle the problem of obsolescence it is necessary that we identify some of the causes and symptoms of obsolescence.

The causes of professional obsolescence are many, and a number of interacting factors appear to be involved. According to Burack & Pati (1970) there are several variables to be considered in a study of
 Parameters of Obsolescence
technological change as a major cause of managerial obsolescence. These are (1) the individual himself, his ability and aptitude to learn on the basis of continuous education; (2) companies, in their lack of ability to develop and implement a plan of action to reduce obsolescence phenomenon, and lack of facilitating the educational activities rather than just approval of them; and (3) society, characterized by lack of awareness of the magnitude of the problem thus creating a cultural lag between man and his material environment. Each of these three variables is a potential source of obsolescence. The variables are shown in the following Table 1.
Parameters of Obsolescence

Table 1

Some Important Variables Associated with the Problem of Managerial Obsolescence

<table>
<thead>
<tr>
<th>Companies</th>
<th>Individual</th>
<th>Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lack of communication between personnel, manpower planners and initiators of technological change</td>
<td>• Lack of aptitude to learn</td>
<td>• Lack of educational facilities keeping in tune with the changes</td>
</tr>
<tr>
<td>• Failure to detect change</td>
<td>• Outdated education</td>
<td>• Proximity influence of the facilities</td>
</tr>
<tr>
<td>• Lack of adequate training facilities</td>
<td>• Lack of internalized motivation for self-education because of age, level of aspiration</td>
<td>• Unawareness of the magnitude of total problem causing passive attitude among individuals</td>
</tr>
<tr>
<td>• Defensive attitude in the absence of know-how</td>
<td>• Family obligation and passive resistance to change and uncertainty</td>
<td>• Available sources of adult educational programmes, conferences, and seminars arranged by the professional societies are not very widely publicized</td>
</tr>
<tr>
<td>• Lack of knowledge about the future manpower requirement</td>
<td>• Desire to maintain status quo</td>
<td>• Lack of closer interaction between education and business communities</td>
</tr>
<tr>
<td>• Failure to motivate and encourage individuals to learn for future. Emphasis is on day-to-day better performance on the job</td>
<td>• Lack of broader education for the development of conceptual skill and to perceive future change better</td>
<td></td>
</tr>
</tbody>
</table>

(Source: MSU Business Topics, 1970)

Some professionals are made obsolete by the organisations in which they work. They are kept obsolete by the limited demands and rigid controls that prevent them from enlarging their scope. A man may be
required to overspecialize to the point where he uses only a fraction of his professional knowledge. Or it may be the individual himself who chooses a specialization that is so narrow that he becomes unaware of new developments in the rest of his profession. Further, the mutual expectancies between the individual and the organization can create or combat obsolescence. This is what Levinson (1971) calls the psychological contract. “What the person expects from the organization, his experiences in dealing with the organization, and how much he trusts the organization for need fulfillment influences his updating.”

Several authors have pointed out that certain attitudes, behaviours, and motivational patterns are symptomatic of obsolescence and hence provide guidelines for detecting it. Malmros (1963) described five signs of obsolescence in the engineer:

- he becomes less and less inclined to apply rigorous mathematical techniques to obtain solutions to his problems;
- he encounters increasing difficulty in reading new technical papers and feels frustrated because he cannot follow the mathematics;
- new technical concepts were confusing to him;
- new tasks and assignments begin to look too difficult to be practical;
- contemporaries do not seek his advice.

Jones & Cooper (1980) examined the various variables influencing obsolescence to find their relative importance. These are given in the following Figure.
The most important variable seems to be manager’s perception of their learning ability and the extent to which they enjoy new work-related learning.

### 2.4 Profile of High & Low Obsolescent Managers

The following variables have been found to be significantly related to managerial obsolescence (Jones, 1979). They are exemplified as they relate to the characteristics of high and low obsolescent managers as found in the research conducted by Jones & Cooper (1980).
### Table 2

#### Profile of High & Low Obsolescent Managers

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>HIGH OBSOLESCENT</th>
<th>LOW OBSOLESCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEMOGRAPHIC</td>
<td>• Younger.</td>
<td>• Older.</td>
</tr>
<tr>
<td></td>
<td>• Low level of educational attainment.</td>
<td>• High level of educational attainment.</td>
</tr>
<tr>
<td></td>
<td>• Negative perception of their learning ability.</td>
<td>• Positive perception of their learning ability.</td>
</tr>
<tr>
<td></td>
<td>• Decline in learning ability in recent years.</td>
<td>• Improved learning ability in recent years.</td>
</tr>
<tr>
<td></td>
<td>• Do not enjoy learning activities.</td>
<td>• Enjoy learning experiences.</td>
</tr>
<tr>
<td>PERSONAL</td>
<td>• Do not think it is important to keep up-to-date, either for maintaining job</td>
<td>• Think it is important to keep up-to-date, both for maintaining job</td>
</tr>
<tr>
<td></td>
<td>effectiveness or for career development.</td>
<td>effectiveness and career development.</td>
</tr>
<tr>
<td></td>
<td>• Not motivated to keep up-to-date.</td>
<td>• Motivated to keep up-to-date.</td>
</tr>
<tr>
<td></td>
<td>• Experience difficulty keeping up with professional literature.</td>
<td>• Can keep up with professional literature.</td>
</tr>
<tr>
<td></td>
<td>• Not members of professional association.</td>
<td>• Members of professional association.</td>
</tr>
<tr>
<td>CAREER</td>
<td>• Likely to work in Production or R&amp;D.</td>
<td>• Likely to work in Finance or personnel.</td>
</tr>
<tr>
<td></td>
<td>• Work at junior/middle management level.</td>
<td>• Work at senior/board level.</td>
</tr>
<tr>
<td></td>
<td>• Likely to have many years' management experience.</td>
<td>• Will have less management experience.</td>
</tr>
<tr>
<td></td>
<td>• Will not have held management posts in other companies.</td>
<td>• Will have held management posts in other companies.</td>
</tr>
<tr>
<td></td>
<td>• Would not be willing to work outside the country in the future.</td>
<td>• Willing to work outside the country in the future.</td>
</tr>
<tr>
<td></td>
<td>• Will not be contributing much to decision-making.</td>
<td>• Will be contributing a great deal to decision-making.</td>
</tr>
<tr>
<td></td>
<td>• Will not find their jobs challenging.</td>
<td>• Will find their jobs challenging.</td>
</tr>
<tr>
<td></td>
<td>• Their skills and abilities will be under-utilised.</td>
<td>• Their skills and abilities will be well-utilised.</td>
</tr>
<tr>
<td>ORGANISATIONAL</td>
<td>• Likely to work in Food, Drink or Tobacco or Printing and paper companies.</td>
<td>• Likely to work in Engineering companies.</td>
</tr>
<tr>
<td></td>
<td>• Likely to work for a large company (500+).</td>
<td>• Likely to work for a medium or small company.</td>
</tr>
<tr>
<td></td>
<td>• Their organisations do not have a policy for career planning.</td>
<td>• Their organisations do have a policy for career planning.</td>
</tr>
<tr>
<td></td>
<td>• Their organisations do not reward high management performance.</td>
<td>• Their organisations do reward high management performance.</td>
</tr>
<tr>
<td></td>
<td>• Their organisations do not encourage innovation.</td>
<td>• Their organisations do encourage innovation.</td>
</tr>
<tr>
<td></td>
<td>• Their organisations are poor at responding to change.</td>
<td>• Their organisations are good at responding to change.</td>
</tr>
<tr>
<td></td>
<td>• Their superiors will not be interested in their careers.</td>
<td>• Their superiors will be interested in their careers.</td>
</tr>
<tr>
<td>PERSONALITY</td>
<td>• More affected by feelings.</td>
<td>• More emotionally stable.</td>
</tr>
<tr>
<td></td>
<td>• More intelligent.</td>
<td>• Less intelligent.</td>
</tr>
<tr>
<td></td>
<td>• More suspicious.</td>
<td>• More trusting.</td>
</tr>
<tr>
<td></td>
<td>• More humble.</td>
<td>• More assertive.</td>
</tr>
<tr>
<td></td>
<td>• More reserved.</td>
<td>• More outgoing.</td>
</tr>
<tr>
<td></td>
<td>• More group dependent.</td>
<td>• More self-sufficient.</td>
</tr>
<tr>
<td></td>
<td>• More imaginative.</td>
<td>• More practical.</td>
</tr>
<tr>
<td></td>
<td>• More forthright.</td>
<td>• More shrewd.</td>
</tr>
<tr>
<td></td>
<td>• Have low motivation to achieve.</td>
<td>• Have high motivation to achieve.</td>
</tr>
</tbody>
</table>
2.5 Consequences of Obsolescence

According to Jones & Cooper (1980) there are a number of possible outcomes, all of which are not very optimistic for the individual, nor indeed for the organisations (see Figure: below). Some may become so incapable that they are demoted, retired or made redundant. Others may even cause so many problems that whole departments or indeed companies may have to close as a result of incompetence. Hence, this problem of obsolescence has deep-rooted consequences, for not only can it affect the individual, but also his department and organisation. This in turn will, of course, affect the economy of a country.

Based on the review of literature carried out in the present chapter a Professional Obsolescence Scale was constructed incorporating the various factors identified. The different stages of scale construction have been detailed in the following chapters.