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PROFESSIONAL OBSOLESCENCE IN THE IT INDUSTRY

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Abstract

The ever-increasing knowledge base and the rapid technological advancements is constantly putting pressure on professionals, specially those in the IT industry to remain competitive and stay relevant. There is a nagging fear about losing jobs which has led to an increasing awareness that the competencies needed are more than that available at the current level. This has become more evident in the current period when the entire world is afflicted with the pandemic.

The principal author of the document has worked over 36 years' experience in the Corporate IT world in various senior level roles and he uses his personal observations to knit through various dimensions of obsolescence and actions and strategies to counter it effectively.

Keywords*: Ability Obsolescence, Attitude Obsolescence, Counter productive Work Behaviour, Dumbsizing, Gatekeeper, Half Life, Obsolescence, Resilience, turn away intention, Turn Over intention, Work Home Conflict, Work Overload.*

INTRODUCTION

Professional obsolescence has been recognized as one of the biggest threats confronting present day IT workers. Researchers predict that the threat for the professionals will only increase with time.

In this document, the principal author who had worked in the Corporate IT world for over 36 years identifies various dimensions and threats of professional obsolescence. The document starts with some popular definitions and challenges faced in attempting to measure obsolescence from the available literature. IT also identifies the various causes of obsolescence at the individual, organisation and the environmental levels and suggests measures to counter them proactively and effectively. Counter productive work behaviour is very costly and the ensuing anxiety and stress as a result of facing the onslaught of ever-increasing knowledge base and technology sometimes becomes too much to handle.

There is a growing need for latitudinal and longitudinal research in this direction so that organisations and IT professionals are better equipped to handle the threat. Despite the imperative to understand the strategies for coping with this professional threat, research on the subject is relatively limited and most studies on the subject till date are anecdotal. Clearly, theoretically grounded empirical research on the subject will not only help advance the understanding on professional obsolescence but will also provide actionable directions for IT professionals to work effectively.

SOME DEFINITIONS

Before we go into the depth of the concept, let us first understand some popular definitions on

Obsolescence. **Merriam-Webster** defines something as obsolete very simply: "No longer in use, or no longer useful. Of a kind or style no longer current."

The most commonly subscribed definitions of obsolescence are those related to job performance (Burack & Pati 1970, Dubin 1990, Harel & Cohen 1982, Reeser 1977, Kaufman 1974, Fossum et.al 1986, Mahler 1975, Norgren 1965, Pazy 1996). Here, obsolescence is defined as the discrepancy between job performance and an expected level of competence which incorporates new knowledge being introduced into a profession.

Thus, professional obsolescence comes when either the job being done is no longer current or the means by which the current job is done is no longer in use or useful. It is related to problem focussed coping (coping of professional obsolescence) rather than emotional focussed coping (associated with higher levels of psychological strain).

Mahler, (1965) identifies two type of obsolescence that can be seen among employees. They are:

- **Ability obsolescence** - the professional's abilities and skills are no longer sufficient for him to keep up with the jobs; and
- **Attitudinal obsolescence** – the professional fails to maintain flexibility in attitude and approach, and to changing problems and conditions.

While Drucker (1995) emphasizes the importance and relevance of knowledge in countering obsolescence, Jones & Cooper (1980) defines obsolescence as the extent to which one's knowledge and skills have failed to keep pace with the current and likely future requirements of his job. Thus, obsolescence occurs when a lack of up-to-date knowledge or skills leads to ineffectiveness.

Professional obsolescence with respect to erosion of professional competencies required for successful performance has been highlighted separately by Dubin (1990), Ferdinand (1966) or Glass (2000). Dhar (1994) saw obsolesce as a consequence of a failure to adapt to changes and his/her future role in the organization.

One of the most modern writers, Stephen R. Covey (2004) predicts that, "Over 20 per cent of the present workforce is becoming obsolete, and that unless they rededicate and reinvent themselves, within a few years, another 20 per cent will become obsolete".

ISSUES IN MEASUREMENT OF OBSOLESCENCE

The problem of measuring obsolesce is far greater than defining it. Although several approaches have been suggested and even used (Kaufman, 1974, 1975), all appear inadequate for measuring obsolescence. Using performance as a measure of obsolescence (e.g., Dalton & Thompson, 1971) is not appropriate because a low managerial ranking or rating often does not necessarily indicate that the individual is obsolescent and a poor performance may stem from other causes.

Rather, tests that have been developed to measure levels of knowledge possessed by technical professionals (e.g. Mali, 1975) fail to account for effectiveness as an individual may not possess the most up-to-date knowledge in his or her field but still be effective in the work role.

Thus, a computer specialist may not be familiar with all the latest developments in the computer field but can be up to date with what is necessary to be effective on the job. Also, obsolescence may become a problem if the individual's work role changes and more extensive up-to-date knowledge or skills in computers are required by the new job.

One approach for measurement, introduced by Kaufman (1973,1974,1978) involved the

identification of behaviours considered to be indicative of obsolescent individuals as reported in the research literature and as revealed in critical incident interviews with engineering managers. He designed a self-assessment questionnaire using summated ratings of 20 dichotomously scored items describing the behaviours that were identified as being indicative of job obsolescence or its converse-being up to date in one's current work role. The validation procedures involved comparing the self-assessed obsolescence of a sample of technical professionals identified by peer evaluators as being highly up to date, with a carefully matched group who were evaluated by the same peers to be obsolescent.

EXAMPLE OF A PROFESSIONAL OBSOLESCENCE SCALE

The level of obsolescence can be determined by using Professional Obsolescence Scale (Chauhan 2000) consisting of 34 items which measures obsolescence on eight dimensions:

- Four dimensions related to the organisation (Organisational Factors: Organisational Climate, Organisational Support, Attitude of Superiors, On-the-Job Updating Activities and
- Four dimensions related to the individual (Individual Factors: Professional Knowledge/Skills, Motivation to Update, Attitude towards Learning, Self-initiated Updating.

These dimensions are explained below:

- Organisational Climate: the extent to which organisational climate encourages autonomy, innovativeness and rewards high performance.
- Organisational Support: the extent to which the organization provides support for enhancing education and career planning for its professionals.
- Attitude of Superiors: the extent to which supervisor provides support for the growth and development to his subordinate.
- On-the-Job Updating Activities: the extent to which a professional perceives his On-the-job activities as relevant for keeping himself updated.
- Professional Knowledge/Skills: the extent to which a professional perceives his knowledge and skills relevant to his/her current job.
- Motivation to Update: the extent to which professionals are motivated to keep updated.
- Attitude towards Learning: Positive/negative attitude of a professional towards learning.
- Self-initiated Updating: the extent to which a professional takes initiative to update.

Mohan, Chauhan and Chauhan (2001**)** identified the specific factors causing obsolescence by ranking of these dimensions. It was inferred that superiors and the organisation as a whole can play a vital role in encouraging the managers to remain updated. Chauhan & Chauhan (2005) also identified organizational climate and attitude of superiors to be the major contributors to managerial obsolescence.

Individual factors encompass broadly the current level of knowledge/skills, some cognitive aspects related to the individual like motivation and attitude and one related to the aspect of the individual, i.e., self-initiated updating activities. The various components taken under Individual Factors are: Professional Knowledge/Skills; Motivation to Update; Attitude towards Learning and Self-initiated Updating Activities.

The four components under Organisational Factors include: Organisational Climate, Organisational Support, Attitude of Superior and On-the job updating activities. The first two

components relate to the broader context of the organisation and the last relates to the immediate work environment of the individual.
Although it may seem at times that there is a difficulty in bringing about a change in the climate and support systems within the organisation, it is also true that a change in the attitude of the superior towards his subordinates in the IT organisation definitely help them to prevent obsolescence.

EMPLOYEE OBSOLESCENCE AND COUNTERPRODUCTIVE WORK BEHAVIOR

The research of Rishipal (2012) revealed that there was significant relationship between the tendency of counterproductive work behaviour and professional effectiveness. Employees are not functioning in stable environment. Development in the field of technology leads to skills obsolescence which in turn leads to employee obsolescence and resulted into change in employee's behaviour at work place.

Obsolescence does not occur overnight. It would be worthwhile to identify some early signals/symptoms of obsolescence so that timely corrective action can be taken. One of the impacts on employee's behaviour is indulging in counter productive work behaviour which may have harmful effects on organization and other employees working in the organization. These are conduct, activities, actions and deeds of employees which negatively affect the organization/employer and other staff members and includes activities like theft, lie to employer, personal use of organizational resources, wastage of organizational resources, denying to take new assignments, rude behaviour with customers/clients, blaming others for mistakes, gossiping with other staff members, insulting co-employees and destroying organizational property etc. (Benett, R.J. and Robinson, S.L. 2000).

Some researchers have also noted behaviour such as **Turn away** (inter occupational mobility) and **Turn over** behaviour (Intra occupational mobility) in the face of professional obsolescence. Turn away intention indicates that the IT professional abandons the area in order to occupy a position in a different area, either in the same company or in another, sometimes assuming a managerial function, sometimes going abroad for higher study or prefers teaching or training job. (Rhodes and Doering 1993. The turn over intention on the other hand is when individuals continue to hold the same or similar jobs in different organizations (Zabusky and Barley 1996).

SOME CONCEPTS AND MODELS USED IN CONNECTION WITH PROFESSIONAL OBSOLESCENCE.

1. **Systems model of obsolescence**

A systems model approach to understanding the complex factors related to obsolescence and updating of technical professionals has long been advocated by Dubin & Cohen, 1970, who summarized the components as:

- **Environmental change** primarily involving rapidly changing technology-including the massive introduction of computers, the information explosion and the exponential increase in technical knowledge.
- **Organization of climate** determined largely by management policies and practices, especially those related to the organisational reward system vis-a-vis keeping up to date.
- **Nature of the work** characterized by job assignment requirements, especially the degree to which knowledge and skills are utilised.

- **Individual characteristics** involve cognitive, motivational, and personality factors related to staying up to date.

According to the model, organisational policies and practices affect obsolescence as well as the nature of the work carried out by technical professionals. The model also predicts that individual characteristics may be affected by the nature of the work, which has support from longitudinal research with technical professionals (Brousseau & Prince, 1981). Therefore, the nature of the work itself is a key component of the model.

Individual characteristics appeared relatively less important. IT may be also the most difficult to control directly, especially after a problem has already developed. Nevertheless, there are some techniques that can be used to monitor and control them.

2. **Mediational Model of Occupational Stress**

Researches show that the threat of professional obsolescence is positively related to problem-focused coping but not emotion-focused coping. Emotion-focused coping of professional obsolescence is associated with higher levels of psychological strain, but problem-focused coping of professional obsolescence is not significantly associated with psychological strain.

3. **Threat Rigidity Model**

The threat-rigidity model posits that a threat perceived by an individual elicits behavioural responses that tend to be less varied or more rigid (Staw et al. 1981). It seems that IT professionals will more likely leave the organization than leave the profession when faced with the threat of professional obsolescence. This model helps to explain the relationship between threat of professional obsolescence and occupational mobility. In a situation of threat, employees develop a turn away or a turnover reaction (explained in earlier section).

4. **Half Life**

The half-life can be viewed as the time it takes after completion of formal studies for half of the knowledge acquired in one's professional studies to be no longer useful or applicable because of new developments in the same field. Therefore, it is the length of time that has elapsed since an IT professional has completed his or her education, rather than age, that may be a crucial factor in susceptibility to obsolescence. Unlike other professionals where basic knowledge remains enduring, the half-life of knowledge and skills in the IT profession is estimated at less than two years (Ang and Slaughter 2000; Dubin 1990).

There is evidence that the half-life has been growing ever shorter which is in keeping with the accelerating rate of creation and application of new knowledge in a wide variety of fields, especially those affected by rapid technological change. Software engineering, computer science, and fields impacted by changes in information technology typically have the shortest half-life.

CAUSES OF OBSOLESCENCE

1. **Individual level** – This depends on the IT professional's ability and aptitude to learn on the basis of continuous education while working to prevent obsolescence.

➢ **Age** –

Assumption that obsolescence increases with age has institutionalized the stereotype which can result in a self-fulfilling prophecy that as one gets older, they are more likely to be treated as obsolescent. Research indicates that there is not a simple relationship between increasing age and obsolescence. A possible reason for a peak appearing early as well as later in the career may be that there are two populations of IT professional: one whose contributions and performance decline with age and another that either maintains the level of contributions and performance

or improves them over time. There is conflicting evidence regarding obsolescence and age based largely on cross-sectional research. Thus, there is more need for more longitudinal research.

➢**Psychological factors** –

An important psychological characteristic that can facilitate or inhibit obsolescence among IT professional is their **cognitive ability,** depending on the occupation. Various cognitive factors include – denial of obsolescence, complacency, lack of confidence, resistance to change and low achievement of motivation. Moreover, the cognitive strength that IT professional bring to their first jobs can help determine the degree to which they stay abreast of new knowledge during subsequent career stages. There is evidence that some cognitive abilities improve throughout the career, largely as a result of experience.

Another factor is the lack **motivation**. The degree to which IT professional engage in activities likely to keep them up to date with new developments is influenced by their interests. More directly related to motivation are **individual differences in needs**. However, unlike interests, which remain relatively stable, needs can change greatly over time and contribute to motivational changes affecting obsolescence. IT professional whose careers are successful are able to satisfy their growth needs, such as achievement, esteem, and self-development, whereas the satisfaction of such needs drops among those who do not experience career success. As growth needs level off or diminish in mid-career, obsolescence can set in. Growth needs are satisfied through the achievement of relevant goals. The most important goals for new IT professional are challenging work and opportunities for advancement. These goals can change during the career, depending on whether or not they are achieved. Also, a socialization process occurs in which the individual's goals may become more congruent with organizational goals.

IT professional' goals that satisfy growth needs may be classified as either: (1) local—oriented to the individual's organization or (2) cosmopolitan—directed to one's profession.

A lack or loss of energy also predisposes IT professional to obsolescence. **Individual initiative** has been identified as a personal characteristic that contributes to the expenditure of energy to stay up to date. Initiative involves not only starting an action but also the capacity to discover new ways of goal attainment.

Initiative may be related to career resilience, one component of a multidimensional career motivation construct. **Resilience** includes adaptability to change, willingness to take risks, and having self-confidence, all of which have been identified as individual characteristics of IT professional who stay up to date.

➢**Nature of the work** –

There are several aspects of the work, like Work Load and Work Home Conflict, carried out by IT professional that can affect their obsolescence. Limited career opportunities and lack of initiative account for the affective aspect of the individual factors. Although challenging work is one of the most important goals of IT professional, most feel that their **knowledge, skills, and abilities (KSAs**) are not utilized well in the working environment. According to Ahuja et al. 2007, work overload is the perception that assigned work exceeds an individual's capability or skill level and work home conflict is the perceived conflict between the demands of work and family.

➢ **The first Job experience** –

There is consistent evidence that the nature of the work experienced by IT professional in their first job has long-lasting effects on their career development. IT professional who are expected to utilize their knowledge and skills in challenging work in their first job will be motivated to increase their competence early in their careers. Conversely, those whose utilization is much more restricted are at risk for becoming obsolescent.

➢ **Dimensions of Utilisation** –

Utilization of knowledge and skills is an important aspect of work challenge and has been found to be strongly related to obsolescence. Both **misutilization and underutilization** account for a challenge. In a study of IT engineers, the two most important causes of obsolescence were related to misutilization, namely,

(1) work assignments that do not require knowledge of the latest developments and

(2) the pressure of schedule demands that leave no time or energy for study.

Work assignments that do not utilize KSAs may also result in underutilization. The underutilized IT professionals has light, rather than heavy, time demands. It occurs most frequently during the first job and affects the new employee's development, because the job itself does not offer challenge, although obsolescence may not occur as readily as it would if the professional were mis utilized.

➢ **Changes in Job assignment** –

IT professional who have had frequent changes in job assignments during their career more easily adapt to change and adjust quickly to their new responsibilities. The challenge provided by frequent job assignment changes serves to maximize utilization of their KSAs and minimize obsolescence. There is evidence that providing different job assignments starting at the beginning of the career is highly associated with remaining professionally up to date in later years.

However, not all changes in job assignments help IT professional keep up to date. For instance, being assigned many routine jobs does not always provide challenge, and could tend to contribute to obsolescence, very likely through misutilization. Also, job assignments should last long enough for one to become proficient in the specialties required to perform the job effectively.

➢ **Specialisation and diversity in Job assignments** –

It has been discovered that IT professional who have a wide understanding of important new fields rather than a thorough knowledge of narrow specialties make greater contributions to both their organization and their professions. This is even more characteristic of those who are older. A diversity of specializations, rather than only one, not only enhances an IT professionals' usefulness to the organization but also stimulates a wide range of professional contributions. On the other hand, being assigned to a narrow area over a long period of time can lead to an inability to perform other parts of the job. Moreover, the single most important stimulation for professional development and growth is on-the-job problem solving that requires a diversity of challenging work assignments.

➢ **Unwillingness to retrain**

Retraining is perceived as a likely path to reemployment without having to pull up one's roots.

Research shows that many individual factors affect unemployed professionals' willingness to retrain, including the following:

- Reluctance to relocate for various reasons
- A perceived lack of jobs in one's field
- Retraining may be unattractive for the work-inhibited.
- Those who keep themselves broadly abreast of new developments are more able to maintain a versatility and openness to change, making them better prepared to go through the retraining required to work in another specialty or applications area.
- Certain personality characteristics are associated with a willingness to retrain. Professionals who are more venturesome and flexible (i.e., the high-risk takers) or those who have a strong belief in their capabilities to effect change (i.e., those high in personal control), are more willing to make a career change through retraining. However, since the strength of these personality characteristics appears to decline with long-term unemployment, retraining should begin prior to a deterioration in flexibility and personal control. (**Kaufman, 1982).**
- There are relatively few **industry programs** designed to retrain professionals who are being terminated or who have retired early. There is evidence that such an approach not only helps to maintain the loyalty and commitment of a work-force that is critical to the success of the firm, but also can be highly cost-effective.

➢ **Opposing Behaviour** –

Obsolescence is noted in IT professionals who respond by **restricting information processing and constricting control.** In restricting information processing, individuals narrow their field of attention, reduce the sources of information, or depend on prior experiences.They cognitively cope with the threat of professional obsolescence by adopting schemas that narrow the scope of knowledge and information processing to their area of specialization at the expense of the breadth of professional knowledge (**Derber 1983; Kozlowski and Farr 1988; Pazy 1994; Steiner and Farr 1986).**

Also, behavioural characteristics such as, complacency, laziness, arrogance and resistance to change also accounts for individual reasons.

2. **Organisational level –**

The organizational climate is the key deciding factor which includes attributes of the work environment determined by management and organizational practices that affect obsolescence. It not only has a direct effect on obsolescence, but it also affects the nature of the work, which has a major impact on obsolescence. Providing challenge through utilization of knowledge and skills is to some degree determined by the technological maturity of the organization. Some aspects of organizational climate that have been identified as relevant to obsolescence include colleague interaction and communication, leadership style and expertise, and management policies, as well as their effects on organizational communication, influence, uncertainty, and rewards.

Broadly, organisational factors contributing to obsolescence fall under 3 categories:

➢ **Job related** – Person to job mismatch, underutilization of competency, Job overload, Lack of autonomy and Noninvolvement in decision making

- **Relationship oriented** –
  Non supportive boss / organization and ego clash

- **Systems related** –
  Ineffective Performance appraisal, Lack of reward and recognition, inappropriate promotion policies and issues like downsizing. A major consequence of organizational downsizing is the need for organizations to retrain their remaining work force (Marks, 1993). However, the costs of retraining and other repercussions are part of what has been called the downside of downsizing, or even **dumbsizing** (Baumohl, 1993; Heenan, 1989). Although downsizing is implemented as a cost-reduction measure, it is dumb because there often are unanticipated consequences that can be costly to all concerned. In addition to the cost of retraining, the company must absorb the costs of lower morale, hiring of temporary workers and consultants, increased overtime, increased health care, outsourcing of entire functions, losing essential employees, severance payments that were greater than expected, and other unanticipated effects (Marks, 1993). It appears that the widespread negative consequences of downsizing results, at least in part, from the fact that many employers who decide to reduce their work force do so without retraining or redeployment policies in place to deal with the subsequent human resource problems (Casio, 1993). Consequently, a heavy price is paid by all. This is especially true of the employees who are terminated (Kaufman, 1982).

- **Colleague interaction and communication** –
  Working with people from diverse fields can stimulate IT professional to learn about different specialties. Not only does diversity in the composition of work groups help stimulate professionals to keep informed of new developments, but including at least one "gatekeeper" helps in the flow of current information. Gatekeepers are generally the most competent and up-to-date IT professional in their group. They stay in close contact with other gatekeepers in the organization as well as in the external world and keep the organization current with new developments.

- The **duration of time IT professional has been in the same group** appears to influence the stimulation provided by colleagues. For instance, interaction with colleagues and diversity of group members have been found to be effective in stimulating competence in both job and profession only when the IT professional have not worked together for too long.

- **Leadership style and expertise –**
  A participatory style of management has been widely advocated as the best way to motivate IT professional, since it provides them with a considerable amount of influence in decision making about their work. Providing IT professionals with freedom is most effective when the supervisor consults them before making important decisions affecting the work of the group. The manager's style, combined with his technical expertise, can be a powerful influence in creating a climate of utilization and challenge that can motivate IT professional to keep up to date.

- **Management Policies -** Management policies that create a climate in which IT professional have little or no influence on decisions that affect their work can result in

underutilization, as well as greater uncertainty. Policies that create an organizational climate laden with uncertainty can have pervasive effects among IT professional. The symptoms are poor communication, limited influence, avoidance of risks, and underutilization—all of which can contribute to obsolescence. The role of managers in motivating their work group members to stay up to date is sometimes limited by external constraints created by top management policies.

Extrinsic and Intrinsic benefits –

Among the most important policies directly affecting obsolescence are those that determine whether or not professional growth and development are rewarded by the organization. There is evidence that the reward climate created by management policies can enhance or inhibit obsolescence. If IT professional do not see that their efforts in self-development are rewarded by the organization, the likelihood that they will become obsolescent is increased.

The organizational reward climate apparently has an important impact on the effort expended by professionals to stay up to date. Rewarding self-development reinforces motivation toward professional growth even among older IT professional, who, with their experience and loyalty, can continue to contribute if they are encouraged to remain up to date. Organizations encouraging contribution in competition and collaborativeness through measures like hackathon, debates and discussion forums benefit the most.

Training and Retraining –

A pre-post study on effects of training on perceived obsolescence by Mohan and Chauhan (1999) has shown that training helped in reducing the perception of obsolescence. Technical professional workers have entered an era in which radical career change has become a way of life that increasingly requires retraining and occupational mobility (Carnevale, Gainer and Schultz, 1990; Kaufman, 1982). Kaufman (1974,1975) also noted the technical professionals, who are primarily responsible for technological change, are also most vulnerable to its consequences, obsolescence and the need to continually update.

For technical professionals who lose their jobs, a possible option has been to retrain for a new occupation. There is an established body of knowledge about the retraining of technical professionals who are out of work (Kaufman, 1982. The willingness of unemployed technical professionals to be retrained is widespread, especially if two conditions are met (Kaufman, 1982):

- Financial assistance is provided for retraining to ease the transition to a new specialization.
- A relevant job is assured at the completion of the retraining.

3. **Environmental level –**

The roots of obsolescence have been traced to the knowledge revolution, the information explosion, and the dynamic changes that have occurred in technology, organizations, occupations, and management methods where the society, in general, has a major role to play. Such environmental change is the driving force toward creating a knowledge economy that produces and distributes ideas and information, requiring a workforce dominated by IT professional. Environmental change can be depicted as all-

pervasive, directly affecting the obsolescence of IT professional as well as the individual, work, and organizational factors that contribute to the problem. However, the knowledge economy, in turn, has not only accelerated the rate of change but has also contributed to the rapid obsolescence of IT professional themselves.

CONCLUSION: RECOMMENDED ACTIONS TO HANDLE OBSOLESCENCE

The purpose of research work on this topic is to devise actions and strategies to handle obsolescence typical in the IT industry. The purpose is generally 2-fold:

- Minimising obsolescence by anticipating changes in the society in general and industry in particular, and
- Accommodating change that cause obsolescence before the costs of obsolescence becomes substantial in an organisation.

Research indicates that combating obsolescence is a shared responsibility between the organization and its employees. It can be tackled by a two-pronged approach:

(1) Initiatives to be taken at the personal level for self-development and updating; and

(2) Interventions like training and continuing education to be taken at the organizational level.

At the individual level, the IT professional need to possess competencies that help organizations compete in the forefront of the technology curve. These new competencies, however, bear little relation to past competencies (Ross et al. 1996). Therefore, an IT professionals' stock of competencies erodes and comes under the continuous threat of professional obsolescence (Dubin 1990; Pazy 1996).

The other requirements are to develop short term and long-term meaningful, realistic and achievable goals. It is also essential to keep abreast with the current developments in the field. Thus, it is very essential to know what else is accomplished in other organisations through participation in regional and national conferences, developing of social networks and accessing information in the Internet and through the search engines can help. Likewise, it is imperative to have a fair understanding of some other aspect of the organisation's work which might be related to one's specific area of work.

At the organisation level, a very conducive work environment, sound HR policies and practices with a focus on training, and deployment of personnel based on their competence are some of the initiatives that prove beneficial. This should be coupled with supervisors with the right attitude towards developing their subordinates and providing the necessary support thereof and a regular centralised communication mechanism would serve as a backbone in achieving in this direction.

Some Guidelines for Cost-Effective Retraining and roles of individual and corporates in achieving them:

- Top management support can make a difference between success and failure of the program.
- Retraining and redeployment should be voluntary. This applies to both job and location.
- Candidates to be carefully screened and selected, using valid diagnostic techniques to determine individual development needs. This should help to assure a better person-job fit.
- Specific jobs should be assigned prior to retraining. Knowing the jobs in which they are

going to be placed should enhance participants' feelings of relevance and the effectiveness of the learning.

- Managers should provide realistic job previews (RJPs) with regard to the new job requirements, the new organizational setting, and relocation, if any.
- In a voluntary transition, such RJPs could help improve employees' decisions about which career change, if any, is likely to be best.
- When the transition is involuntary, the RJP would create more realistic expectations and help in adjusting to the career change.
- Instructors should be highly qualified in the subject matter they are teaching and should be perceived as credible by the participants. This will enhance the acceptability and effectiveness of the instructors.
- Opportunities for open two-way communication should be provided by the instructors to reinforce learning and courses should be tailor-made to provide subject matter designed to meet the new job requirements.
- Career planning should be ongoing to enhance the possibilities of continued growth and development.
- Cost-effectiveness of the program to be monitored through continuous ongoing evaluation.

Finally, although IT research consistently points to professional obsolescence as a critical issue (**Lee et al. 1995; Nelson 1991**), limited theoretical and empirical research has directly examined the threat of professional obsolescence, its aetiology, structure, or consequences. Organisations should encourage more research-oriented work in combating stress as a means of effective handling of obsolescence. At the individual level, professional obsolescence undoubtedly creates an element of stress and anxiety at the individual level which is handled therapeutically through relaxation, guided meditation and hypnotherapy. The principle author being a practising counsellor and hypnotherapist has helped professionals and senior executives to combat the source of the stress ensuing from professional obsolescence amongst IT executives, especially at the senior level.

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