

# TRAINING AND EDUCATION WITH TECHNOLOGY INNOVATION IMPACT ON SME

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## ABSTRACT

It's very important to know the training needs of enterprise's present and past demand, training activities planning often starting to solve problems of the present and past. Based on technical innovation training, training analysis is ascending into the strategic level, standing in a new height. Through the analysis of the role which enterprise training plays in technology innovation, based on the enterprise development strategy, job analysis and technical requirements; propose technical processes in small and medium-sized enterprises. From the Angle of enterprise technology innovation, put forward the enterprise training strategies which should be adopted in small and medium-sized enterprises and IT Sectors.

## INTRODUCTION

Extant literature acknowledges the role training, learning, and skill development play in the development of the individual, organisational, and dynamic capabilities necessary for achieving competitive advantage (Lepak & Snell, 2003; Pfeffer, 1994; Teece et al., 1990; Harrison & Kessels, 2004). Recent studies suggest that, globally, close to \$100 billion per annum is invested in employee training (Ketter, 2006). Further, investment in training and education has been noted to enhance national competitiveness and minimize the risk of unemployment (ILO, 2001; OECD, 1994; Bishop, 1994; Felstead & Green, 1995; Ashton & Green, 1996). Although the extant literature is well developed on the supply side of skills focusing on a nation's training and education infrastructure, the debate over the relative demand for the skills created by the educational infrastructure exists in policy, academic and business communities (Felstead et al, 2002; Keep & Mayhew, 1996). . Improvements at a national level can occur only in the context of improvement of the provision of training at an organisational level (Cappelli, 1994; Porter et al., 2004).

## Defining Training

The study and practice of HRD focuses mainly on issues relating to training and development, and career and organisation development (McMaglan, 1989; De Cieri & Holland, 2006; Swanson & Holton, 2001). A definition of HRD that has received significant consensus is that it is "a process for developing and unleashing human expertise through education and organisation development and personnel training and development for the purpose of improving performance" (Swanson & Holton, 2001, p. 4). The Cambridge Dictionary defines training as the process of learning the skills you need to do a particular job or activity. Generally within the human resource management (HRM) and HRD literatures, training is defined as a planned and

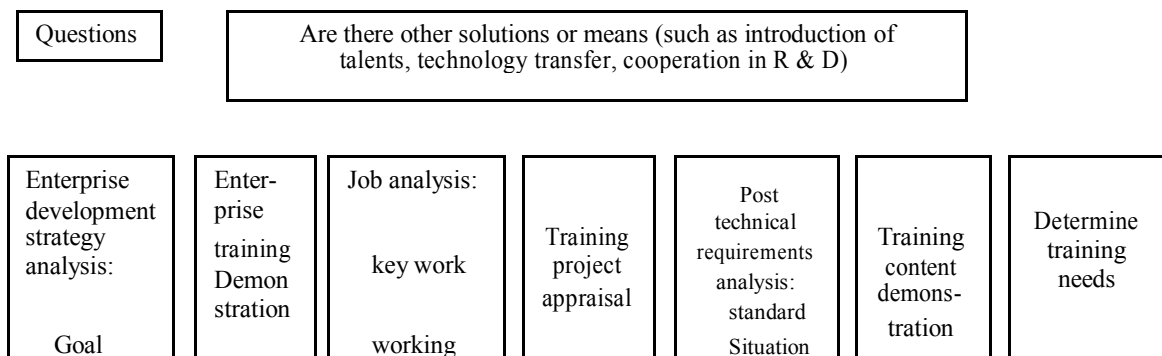
systematic effort to modify knowledge, skills and attitudes through learning experiences, to achieve effective performance in an activity or a range of activities Training is broadly conceptualized, in the context of organisations operating for profit as all learning activities relevant to the operation of an enterprise and includes formal and informal training, development, and education provided by the organisation internally or externally

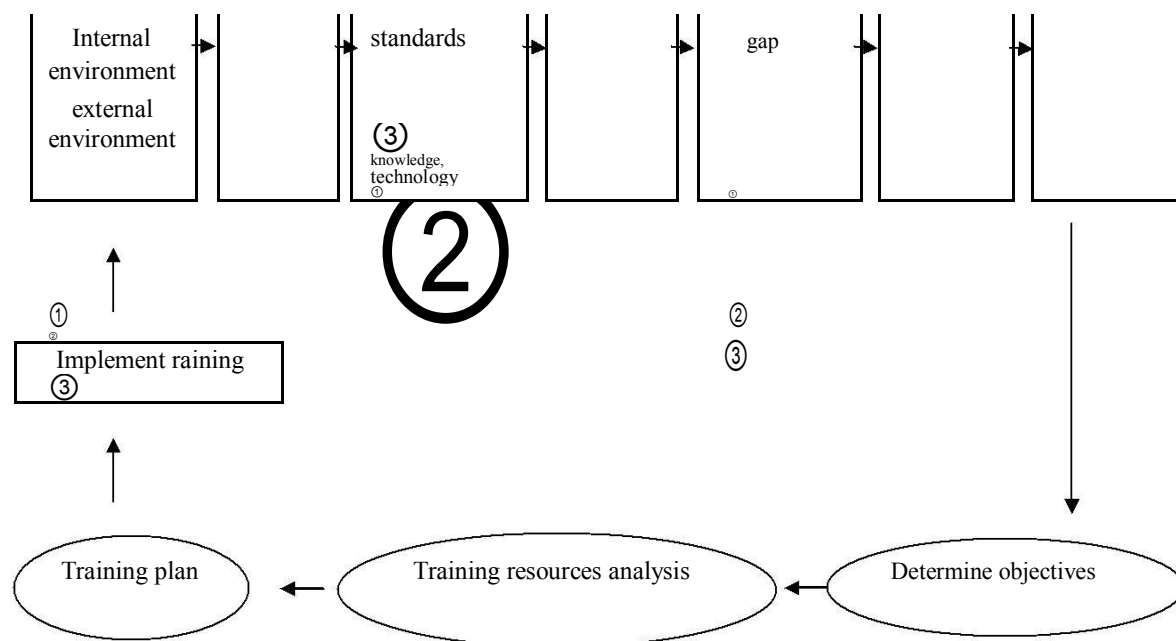
**Training Needs Analysis**  
**Analysis processes of technical training needs**

The traditional method of training needs put more attention on the needs of business in the past and present situation, and as the starting point to plan training activities in order to solve business problems that have accumulated over the past and the present. The training needs based on technological innovation enhance the training needs analysis to the strategic level, stands at a new level. First, the company's strategic training needs analysis is forward-looking, its decision is based on the future development needs of enterprises so as to meet needs in the market competition; Second, analysis positions based on the enterprise training needs, mainly through analysis of knowledge, skills gap state with the existing conditions which are necessary to complete the tasks of technological innovation, to determine the training courses that training needs, mainly through analysis the organisation's objectives, structures, policies, performances, environmental factors, accurately identify organizational problems and the source of the problem in order to determine whether the most effective way is training; Third, analysis position technical requirements, it is useful for employees to find the gap to look for gaps, cover the shortage , fulfill the task in the way of strengthening knowledge, skills and behaviors. Its purpose is to see the performance-related working details, standards and the knowledge and skills that should have in order to complete the work, so as to design and work out the related training courses; Fourth, analysis of individual employees, from the perspective of the trainees profile training needs, by analyzing of the gap between individual employees’ current condition and the condition supposed to be, determine

Who Should Attend and the content. On that basis, determine the corporate training objectives. The figure 1 below based on training needs analysis shows the analysis process.

**Figure 1.The chart of training needs**





### Key links of training needs analysis

The core of training needs analysis is to identify the gap between corporate status and objectives, technology innovation strategic goals, job standards, the development aspirations of individual employees, and then to analyze the reasons for the gap, find what areas can be addressed through training. For this, firms should have to grasp the key link of training needs analysis:

- a) Make each employee understand the technological innovation strategy, realize the relationship between their work and enterprise development strategies;
- b) Before carrying out training needs analysis, it is vital to create an environment within the enterprise, so that the business leaders, branch manager, project managers, "the five members", engineers and operators all have psychological preparation and time to think about themselves, the department, the project Department, the company's training needs, causing the attention of each person;
- c) Based on performance- assessment, analysis of performance goals and gaps, for those who fail to complete performance goals, we must analyze carefully, is it the skill factors or ideological factors , if they are caused by skill factors, it should be solved through training which produced a training needs;
- d) The effectiveness training needs analysis should be guaranteed by a whole work processes, therefore, firstly determine the time and the main task of the whole analysis process, make complete plans and programs, gain the approval from relevant persons, secondly, design related forms, analysis models, in advance to verify the effectiveness of tools;

e) When use of models, according conditions and flexible use of it. Through training needs analysis, you can understand the training needs in enterprises; also understand the training needs of the staff. According to the technological innovation strategy, which combined the above two desires, determine long-term training needs of business and annual training needs, for the training plan and training programs.

### **Technology-based Innovation Strategy for IT-Sector, Small and Medium size Enterprises**

**Training:** If small and medium enterprises establish their own training institutions, training costs is relatively high; therefore, companies rely mainly on external training resources, see internal training resources as supplement. According to the requirements of technological innovation on different levels of staff, firms should target to different training strategies.

### **Training and education for companies' technological innovation in senior management, for the creative consciousness:**

Through different levels of training, Small and medium enterprises should be aware of technological innovation is not only big companies or research institutions should do but also ways to accelerate development of Small and medium enterprises, achieve business objectives. First foster awareness of innovation, put technology innovation activities in the business agenda, firmly establish the technology innovation is an effective ways to development , not just "wait ,rely on and ask for", firms can not promote and support by government alone, they should take the initiative to engage in technological innovation, rather than passively waiting, make small and medium enterprises truly become the main body of technological innovation, second is to establish an effective training system and in accordance with strategic development objectives, develop medium and long term corporate training program.

### **Introducing competency models to meet training needs of different levels and the different types of staff within the enterprise:**

"Competence" in this context emphasizes the values of workers, motivation, personality or attitudes, skills, knowledge and other characteristics; it is closely linked with job performance, it can be used to predict future performance; it can distinguish outstanding and ordinary performance. Competency model is combined with required superior performance in one position, contains multi-competence structure, which "describes an unique combination of specific knowledge, skills and characteristics to efficient complete the work". (Bi, Y., andLi, Y., 2008). In small and medium enterprise, training can force this model as the training content, training design. In particular, for small and medium enterprises, the enterprise can build competence in various key positions in the model to determine the employees' values, motives, personality or attitudes, skills, knowledge management research.

### **Developing training mode for social training:**

By the intermediary institutions and civil society groups, provide training for IT, Small and medium enterprises, There are two ways for their training, one is enterprises and institutions take training together, staff in the firm are in the common with rich experience, but lack of theoretical knowledge, teaching method does not flexible, people in professional training institutions are always theory knowledgeable instructor, teaching in a higher level, but cannot combine the reality of the enterprise production and operation of the phenomenon together, the right thing is integrate them, complementary, enhance training effectiveness; second is self-training, it is a self-learning activities for obtaining some professional academic and technical qualifications which countries have set up, participate in agency training institutions to get a

professional qualification certificates ,enterprise support for their positive attitude, and set up assistance system.

**Introduction of modern learning theory, and Suitable teaching model (Song, H., 2007), improve training methods:** In training design and training effectiveness evaluation process, we can accord to different learning characteristics design scientific training methods to improve the training processes and methods in small and medium enterprise. Against the characteristics of persons in different posts, training priorities and characteristics of trainees, make trainees actively participate in training and learning activities. Through multimedia, Internet, games, scenario exercises, group discussions, case teaching and other new technologies and new methods to improve and enhance the existing Small and medium enterprises internal and external training effect.

#### **Establish and improve the training management system**

Training effect in Small and medium enterprises cannot achieve without a sound training management system. In particular, our Small and medium enterprises can try the following three works.

- a) Establish training funds management system;
- b) Establishing training incentive system, improve the incentive mechanism to mobilize the enthusiasm of the trainees;
- c) Enhance the training quality control and establish a strict system of training quality assessment.

**Adhere to good internal training:** Internal training can be designed according to different learning characteristics, improve the training processes and methods in small and medium enterprises, according to characteristics of different positions, training priorities and the characteristics of trainees, enable trainees to actively participate in training and learning activities. The Government should also encourage and support small and medium enterprise independently training in enterprises, actively implement staff training programs, at the same time, improve the quality of regional labor and industry. The Government should continue to improve the system environment, the incentive to develop workable self-training policies for Small and medium enterprises and IT-Sectors.

**Practice Contribution:** Owing to the acknowledged role training plays in improving an organisation's performance at various levels, the explanations for variation in training for firms operating in different strategic milieus are critical to practitioners' understanding. The study offers deep insights into the training drivers and the complex decision making that surrounds it. Further, gaining an understanding of how certain organisational capabilities and human resource management practices in a dynamic outsourcing environment are developed will assist practitioners to make strategic choices in their training decision making

**Methodological Contribution:** In the context of a developing country such as India, this study's contribution is in analysing the findings from the viewpoint of key informants of the study in their natural settings. The relatively under-researched contextual setting and research topic, and the theory-building case-study research strategy adopted (Dooley, 2002; Yin, 2003 Eisenhardt, 1989) to study a

dynamic outsourcing environment are unique contributions from a methodological viewpoint. Understanding the phenomenon in a natural setting enables richness and reach. Triangulation of data allows flexibility during various stages of data collection, analysis, and theory-building (Eisenhardt, 1989).

**CONCLUSION:** The purpose of this paper consisted of determining the need of training and education in IT, Small and medium size enterprise so that they are capable of creating a better service for the users. The obsolete type of training and education structure will help the IT, small and medium size enterprises in achieving competitive advantages. In this a contextual background of India's wider socio-economic and political environment is provided, to enable a better understanding of the problem, given its unique cultural, social, economic and political environment and the unique stages of evolution of the IT sector.

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