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Linking Training, Productivity and Competitive Strategy: Implications of Value Chain Model for Strategically Effective Training Programs

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In this era of global competition and emerging organization structures like teams, flatter organizations, learning organizations, network organizations etc., access to and maintenance of skilled human resources will be more important than access to capital or technology in the race for competitive advantage among nations and organizations in a global marketplace. Despite the increased training investments in organizations, however, the results on productivity and competitiveness are inconsistent and differ from organization to organization. There is growing recognition that the training program must not only be effective in terms of productivity gains but also be in line with the competitive strategic objectives of the organization. The paper discusses the determinants of productivity, while emphasizing the strategic linkage between training, productivity and competitive strategy of the organization, using value chain model. The role of training effectiveness as a moderating variable between training intervention and competitive strategic results is emphasized. The paper also presents the implications of 'value chain model' for assessing strategic training needs/objectives in line with the generic competitive strategy and productivity objectives of the organization. The paper has theoretical as well as managerial implications for developing strategic training programs aimed at productivity and competitive advantage.

Field of Research: Strategic management, Human Resource Development

1. Introduction

Human resources of the organizations are taking the connotation of 'human capital' instead of mere 'labor'. This is the recognition of the central role of

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human resources in the emerging work organizations such as teams, network structures, learning organizations, triple I organizations and knowledge management. All of these human-centered structures and work processes require a culture of innovation, learning and trust among the knowledge workers and brain-associates of the organizations and, thus, bring the role of training central to the productivity and competitiveness of organizations (Huang, 2001; Drucker 1997; Pfeffer, 1994; Peters and Waterman, 1982; Handy, 1989; Mühlemeyer and Clarke, 1996; Hwang, 2003). With the advent of global marketplace, the organizations are facing severe competition from the global market players in the areas of productivity, quality and competitiveness. The editors of HBR, in their special issue on 50th anniversary of HBR, concluded on the behalf of the five selected thinkers of business management that, " the continuing challenge for executives--- is not technology, but the art of human – and humane – management". The other research work in this area also confirms a significant impact of training on workers' and organizational productivity and other business results (Reenen, Dearden and Reed, 2005; Savery and Luks, 2004; Bragar and Johnson, 1997; Eicher and Kim, 1999).

Despite the strong implications of training activities for productivity and other organizational outcomes, however, much of the empirical evidence (Kurosawa, Ohtake and Auriga, 2005; Zwick, 2002; Black and Lynch, 2000, 1996; Schonewille, 2001) in the area is inconsistent and lacks strong explanation for such varying results.

These contradicting findings are due to the fact that much of the research work in this area has concentrated on either training effectiveness evaluation or training impact on individual and organizational performance (Hatton, 2003). Moreover, the difficulty lies in the need to take account of 'unobserved heterogeneity'-as explained by Zwick (2005)- in the organizations in terms of their strategic objectives, training needs, training designs, implementation mechanisms, which are significant determinants of the responsiveness of productivity to the training interventions. These above factors have confused the theorist and practitioners to draw an elaborate linkage between the training interventions and organizational productivity, consistent with the strategic objectives of the organizations. This paper, through extensive literature review on the topic and exploratory evidence from 15 domestic and multinational business firms working in Pakistan, seeks to:

- Point out the relationship between productivity, competitive strategy and competitiveness, using Porter's (1985) value chain model;
- Understand the productivity and its determinants, while emphasizing vital role of training;
- Operationalize the relationship between training, productivity, competitiveness and competitive strategy of the organization;
- Present a strategic training process, highlighting the chain relationship between organization's generic competitive strategy, training intervention, organizational productivity and competitiveness;

- Elaborate that training effectiveness is crucial moderator to determine the responsiveness of organizational productivity to training intervention consistent with the competitive strategic thrust of the organization. The training effectiveness can be used to explain the 'unobserved heterogeneity', which causes differing results of training impact on organizational performance metrics;
- Identify two sub-concepts of training effectiveness, namely "strategic effectiveness"- i.e. fit between competitive organization strategy and training objectives- and "learning effectiveness"- i.e. validity of training program design, delivery and implementation;
- Develop a model of strategic training needs assessment based on 'value chain model', arguing that the model has implications for the strategic training requirements of the organizations and can be used to determine the training objectives, which will be in line with their generic competitive strategy. The model will serve to enhance the "strategic effectiveness" and competitive worth of the training programs.

2. Literature Review

The human resources are the most valuable assets of the organization and, thus, expenditures on training should be regarded as 'investment in people' and, therefore, the most valuable investment of all. McNamara 1999 has pinpointed increased job satisfaction and morale among employees, increased employee motivation, increased efficiencies in processes resulting in financial gain, increased capacity to adopt new technologies and methods, increased innovation in strategies and products, reduced employee turnover and enhanced company image as the possible outcomes of training in business. A wide body of research work in this area also confirms a significant impact of training on workers' and organizational productivity and other business results (Reenen et al, 2005; Savery et al, 2004; Bragar et al, 1997, Eicher et al, 1999).

On the other hand, the empirical research on training and productivity is also full of evidence showing inconsistent results of training impact on organizational productivity and competitiveness. Black and Lynch (1996) attribute the small measured effects of training on productivity to the incomplete or inaccurate data. In their attempt to measure the effects of training, conclude that the number of workers trained has no apparent impact on productivity, although point estimates suggest that past training, in *t*-2 or *t*-3, raises current productivity. New tests with US data (Black and Lynch, 2000) suggest that training has a positive effect on productivity and earnings, but the results are still not convincing. The empirical research by Schonewille (2001) and Kurosawa et al (2005) also fail to obtain significant results of training impact on productivity. In a productivity model, Barrett and O'Connell (1999) obtain coefficients close to zero, except for those associated with the number of participants in general training. The training effectiveness evaluation models (Warr, Bird and Rackham-CIRO model, 1970;

Kirkpatrick, 1998; Phillips, 1997) have primarily an evaluation focus of 'what' and 'when' to measure training effectiveness rather than directed at changes in training objectives, design or delivery to enhance its effectiveness. There is the gap between the training effectiveness evaluation models and empirical measurement of the effects of training on organization productivity. The former evaluates the training effectiveness at various steps of the training process, while the latter aggregates all those measures in a single aggregate of 'measurement of the training effects on organizational performance metrics e.g. the work of Reenen et al, 2005; Bragar and Johnson, 1997 and Zwick, 2002. Some researchers have stressed the learning effectiveness and/or transferred learning as the sole determinants of training effect on organizational outcome (Brinkerhoff, 2006; Burrow and Berardinelli, 2003). But such effective and transferred learning which is not aligned with the strategic objectives of the organization will not add to the competitive worth of the organization.

Schonewille (2001) concludes that, "… researchers are still searching for appropriate methods to measure the effects of training and the magnitude of training itself. Although it has been shown that training generally works, we still do not know the determinants of the returns to training. Data availability and methods to measure training and its effectiveness need severe improvement and the scope of research has to be widened, in order to understand empirical results".

2.1. Basic Terms: Training and Productivity

Before discussing the particular relationships, it is necessary to operationalize the basic variables of training and productivity, so as to make the precise analysis possible. Measurement and improvement regimes are often built without a clear understanding of what is being measured or improved. This can be regarded as a missed opportunity to fully understand - and then optimizes - important factors related with competitiveness and success (Tangen, 2005).

2.1.1. Training

Training is generally defined as a planned and systematic effort to modify or develop knowledge, skills and attitudes through learning experiences, to achieve effective performance in an activity or a range of activities within current job focus (Garavan, 1997).

2.1.2. Productivity

Being the ratio of output to input, productivity is the comparison of the physical outputs from transformation process with the physical inputs into that process (Rao and Miller, 2004; Singh et al, 2000). According to Helms (1996), every person who performs a job is a producer in the economy. When we compare the resources that go into a job with what is produced, we have a productivity

measure. Tangen (2005) has provided a useful description of the terms productivity, profitability, performance, efficiency and effectiveness, which are often interchangeable but are quite distinct from each other. According to Tangen (2005), productivity is closely related to the use of resources meaning that a company's productivity is reduced if its resources are not properly used. Second, productivity is also strongly connected to the creation of value. Thus, high productivity is achieved when activities and resources in the manufacturing transformation process add value to the produced goods. Since productivity is the productive capability of the resources consumed in the organizations, it can be measured for each production resource separately i.e. single factor productivity; as well as for all resources jointly i.e. total factor productivity. The productivity is a relative concept: it cannot be said to increase or decrease unless a comparison is made, either of variations from a "standard" at a certain point in time (which can be based on, for example, a competitor or another department) or of changes over time.

The two related concepts of efficiency and effectiveness are also sometimes confused with the productivity. Efficiency, in the organizational context, is related with the utilization of inputs during the transformation process. On the other hand, the effectiveness is concerned with the correctness and enhancement of the output i.e. more quantity or quality of output. Thus the two terms reflect the nominator and denominator side of the productivity ratio i.e. output/input (see Figure 1).

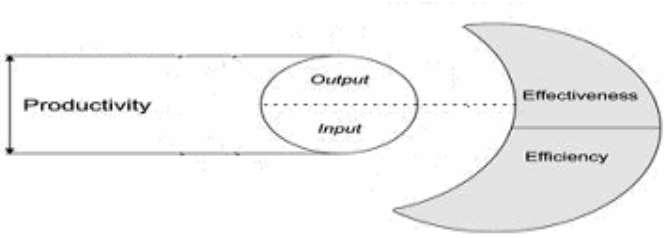

Figure 1: The relationship between efficiency, effectiveness and productivity (Source: Tangen, 2005)

3. Methodology

A qualitative exploratory research design is adopted keeping in view the theoretical nature of the project and complex and dynamic nature of the organizations. A grounded theory exploratory research approach is adopted through extensive review of existing literature available on the topic (Glaser and Strauss, 1967; Corbin and Strauss, 1990; Pandit, 1996). This inductive approach has allowed the researchers to identify the emerging relationships grounded into existing data. The case study methodology is also used to review and analyze the relationships, thus, depicted. A carefully selected group of 15 domestic and multinational companies working in Pakistan are analyzed for their training programs, their implementation and their results.

4. Discussion of Findings

Together with the help of relationships between concerned variables grounded into secondary data on the topic and empirical evidence obtained from selected companies, following new relationships are theorized.

4.1. Relationship between Productivity, Competitiveness and Competitive Strategy:

Porter (1999) suggests that competitiveness of firms should be defined in terms of productivity gains and, thus, presents a set of generic competitive strategies to achieve competitiveness. The objective of the competitive strategy is to enhance the "value margin" i.e. difference between cost of inputs and value of output, which can be achieved either through cost leadership, differentiation or hybrid strategy. Since value margin is another way to represents the productivity, the competitive strategies, thus, represent the routes to productivity and competitiveness improvement (See Figure 2). It is interesting to note that this construct is also in line with the customer satisfaction equation of value/cost.

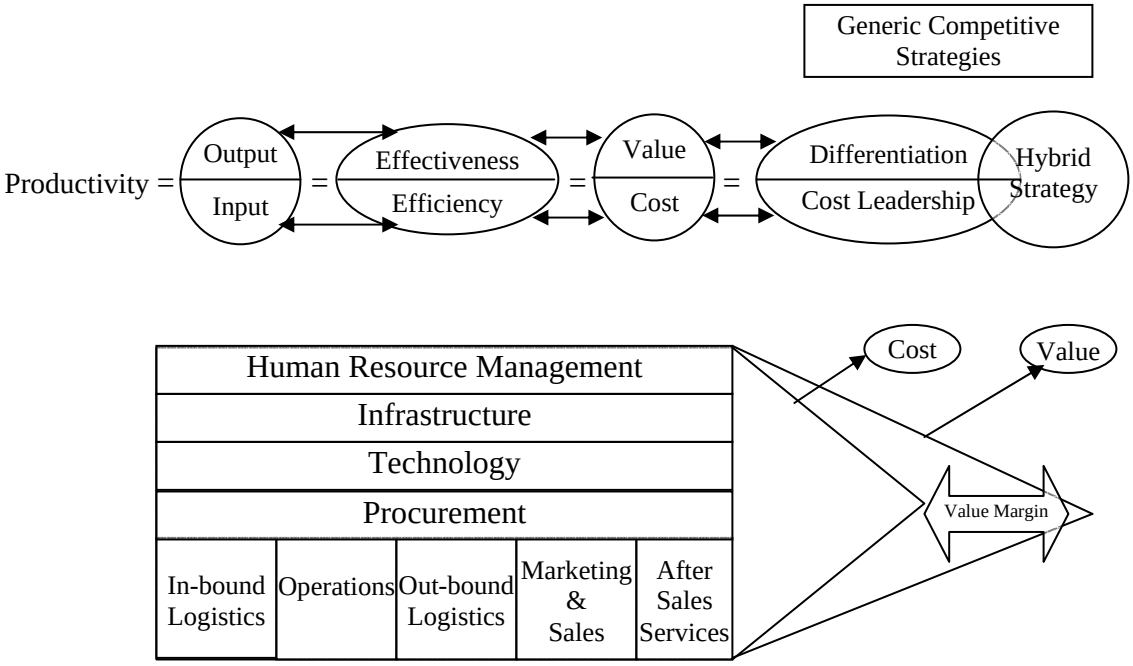

Figure 2: Relationship between productivity and competitive strategy

4.2. Determinants of Productivity

After elaborating the linkage between productivity and competitive organizational strategy, it is necessary to understand the determinants of productivity. The results of a study by Schmenner and Rho (1990) demonstrate that three factors significantly affect the productivity: improved flow of materials; investment in new technology; and human resource initiatives. Helms (1996) also points out the training of workers, better technology and re-engineering of workflow and systems to improve productivity. To sum up, productivity improvements result from the growth in workers' abilities, the adoption of new technology, the number and quality of product and process inventions. Figure 3 below depicts these determinants and elaborates the role of training in productivity improvement and competitive advantage.

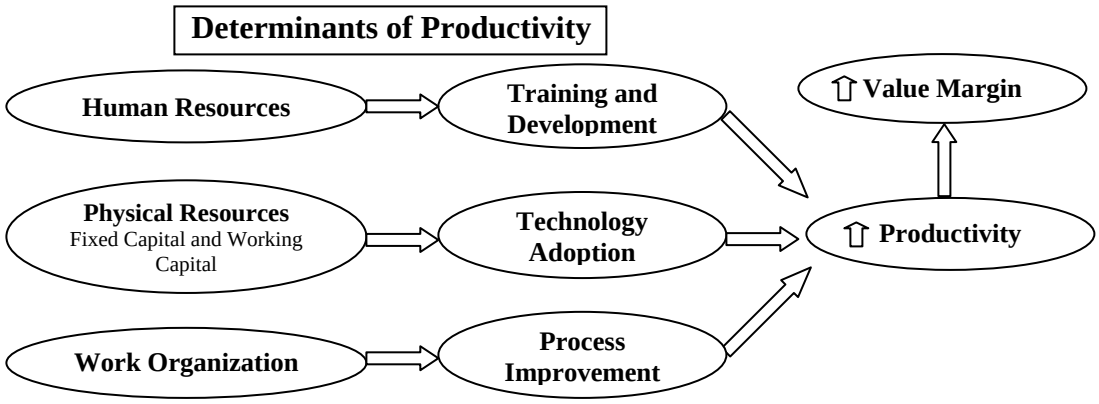

Figure 3: Determinants of productivity and the role of training

This implies that the organizations seeking to improve their productivity must probe into their human and physical resources, and work organization to get insight about the possible ways by which these can contribute more efficiently and/or effectively to the transformation process. The empirical evidence related to productivity measurement reveals the same factors as the major determinants. The managers belonging to the selected firms in our study also confirmed the same results.

4.3. Prominent Role of Training in Productivity Improvement

Out of the above ways of increasing productivity, however, the first one i.e. investment in training of workforce for the improvement of their knowledge, skills and attitudes is the surest path to the productivity improvement and other performance outcomes. Whereas the success of the other two ways i.e. technology adoption and process improvement is dependent on the knowledge, skills and attitudes of the workforce in order to use the modern equipment or work in the new processes and work formats. Reenen et al (2005) have also examined

the interaction between skills, technology and the organizational changes brought in by innovative human resource management practices. His data suggest that a lower level of employee skills holds organizational and technological changes back. Training and educational improvements can have a significant effect on productivity because they encourage the adoption of better technologies and changes in workplace practices, such as decentralization and team working etc.In the same study, they have also demonstrated dramatic results regarding training impact on productivity. Quality of labor inputs stands out to be the major reason for differences in productivity among countries and organizations and training stands out to be the major reason for differences in quality of labor inputs (Kurosawa, Ohtake and Ariga, 2005). Another study by Savery and Luks (2004) to quantify the impact of training on organizational outcomes has regarded training as “an important precursor for firms who wish to improve their productivity”. Conclusively, human element in the organizations must be the starting point for any productivity and performance improvement efforts.

Learning Curve and Productivity

The relationship between training and productivity can also be confirmed through the learning curve theorem, which postulates that per unit cost decreases as the organizations learn more about their customers, products, processes, machines and equipments, and workers’ capabilities. Since productivity ratio i.e. output/input is the inverse of unit cost, it must increase as the unit cost decreases due to the learning effect. The learning curve effect on productivity can be accelerated through the use of effective training interventions. Conclusively, it is the human element in the organizations, which is the source of all the productivity, sustained competitive advantage and all improvements the organizations wish to make and is possible only through investment in people first.

4.4. Strategic Training Process: Chain Relationship between Training, Productivity and Competitive Organizational Strategy with Training Effectiveness as Moderating Variable

The thrust of any competitive strategy is sustainable competitive advantage. Productivity is seen as one of the most vital factors affecting an organization’s competitiveness (Tangen, 2005, Porter, 1990). The human resources of the organizations are the decisive source of competitive advantage, which is hard to copy (Johnson and Scholes, 2005). Training is an important component of the strategic management process of the organizations with quite overwhelming role in all of its areas. Even when the incremental approach is adopted whereby strategy formulation and implementation go side by side (Mintzberg and Quinn, 1991), the employees, trained for continuous improvement, feel comfortable with the continuous changes made in the organization.Based on the relationships presented so far, the traditional training process is revised into a strategic training process (See Figure 4). This process is based on the chain relationship between

training, productivity and the organizational competitive strategy. In this process, the training effectiveness serves as the moderating variable to determine the extent of the impact of training intervention on individual/group productivity and organizational productivity and achievement of competitive strategic objectives. The quality of training program i.e. effective training interventions consistent with the organizational objective is explained as a significant determinant of the extent of training impact on organizational outcomes (Tennant et all, 2002). The model (See Figure 4) represents the sequential process by which training intervention impact individual/group productivity and, thereby, organizational productivity and results in line with the competitive strategic thrust of the organization. The training effectiveness is further categorized into two sub-concepts i.e. strategic effectiveness and learning effectiveness. This division would allow better understanding of the role of training effectiveness in training impact on competitive strategic results.

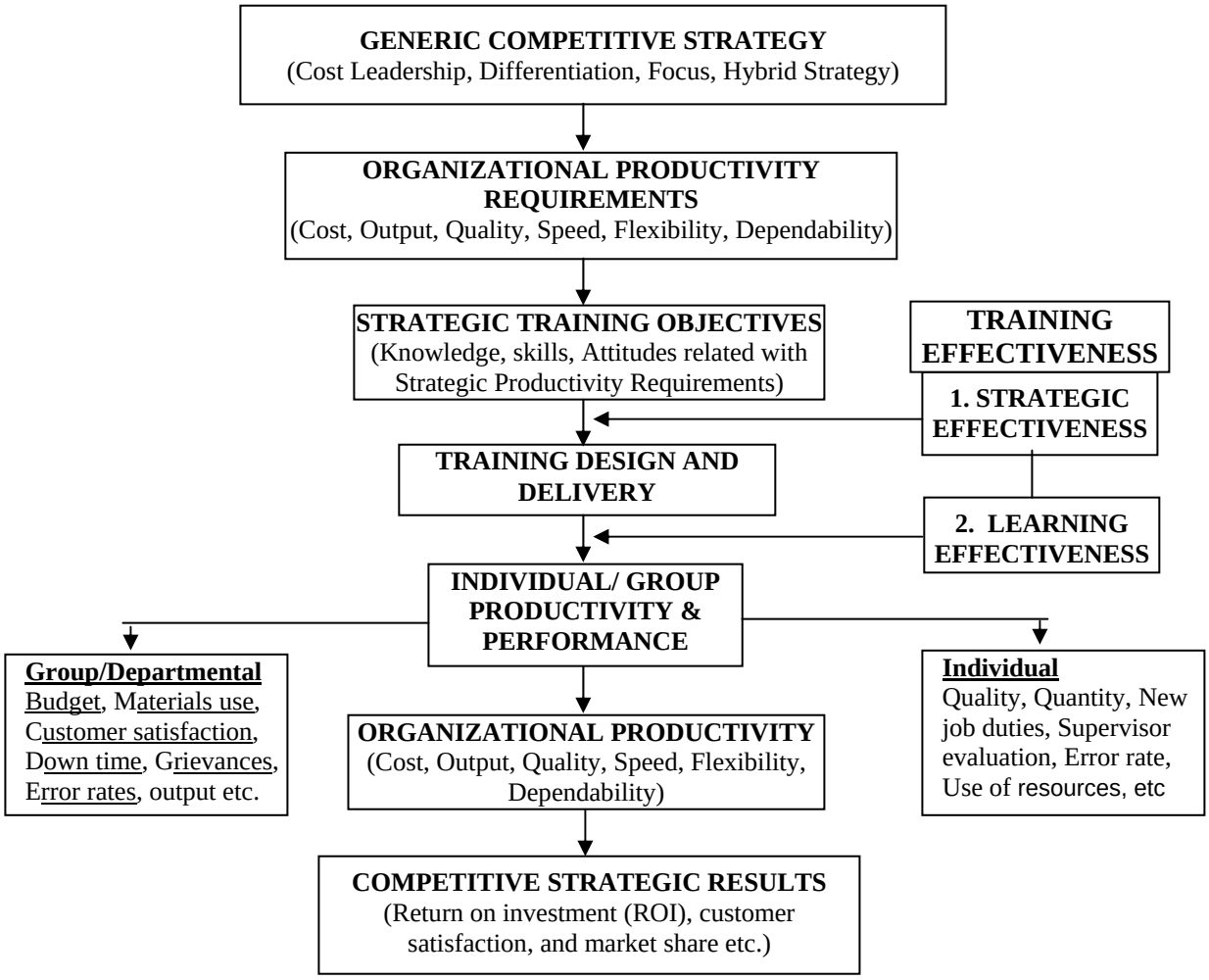

Figure 4: Strategic training process: chain relationship between competitive organizational strategy, training intervention, productivity and competitive strategic results

4.4.1. Strategic Effectiveness

This represents the degree to which individual/group training objectives, the productivity objectives and competitive strategy are consistent with each other. Most of the training programs fail to generate the desired results because they focus on issues, which do not have the strategic importance (Helms, 1996; Tennant et al, 2004). Greater the strategic effectiveness stronger would be the impact of individual/group performance improvement, as a result of training, on competitive organizational results and *vice versa.* This suggests that training needs assessment should originate from the competitive organizational strategy of the organization.

4.4.2. Learning Effectiveness

This represents the degree to which design, delivery and implementation of training program generate desired knowledge, skills and attitudes amongst the employees. This also includes the transferred learning i.e. ability of the employees to utilize new knowledge, skills and attitudes on their job duties. Greater the learning effectiveness stronger would be the training impact on individual and group performance in the organizations and *vice versa*.

Conclusively, the above moderating role of training effectiveness can help explain the inconsistency of results of training impacts on organizational productivity and competitiveness found in various studies on the topic. Our analysis of the training programs of selected organizations and detailed discussion with their managers also confirmed the proposed relationship.

4.5. Strategic Training Need Assessment: Implications of 'Value Chain Model

Most of the work in the field of training need analysis (TNA) postulates a reactionary approach i.e. seeking the problem areas and then developing training objectives accordingly. Very few of them have sought to present a proactive approach to develop the training objectives based on competitive strategy in the start (Chiu, Thompson, Mak, Lo, 1999). According to Mühlemeyer and Clarke (1997), the majority of companies state that planning for training and development occurs only as a result of problems arising at the workplace. Tennant et al (2004) have theorized a number of techniques to enhance the strategic orientation of training programs but none of these techniques directly relate with the generic competitive strategy of the organization. The value chain model which is at the heart of generic competitive strategies can be used to identify the strategic training needs/objectives of the organization in terms of productivity objectives. This strategic training need assessment would enhance the strategic effectiveness of the training programs and will be used as a proactive tool to

identify the training needs consistent with the future strategic intent of the organization. Such training needs, based on value chain model, would automatically be translated in terms of productivity requirements of the competitive strategy, accordingly.

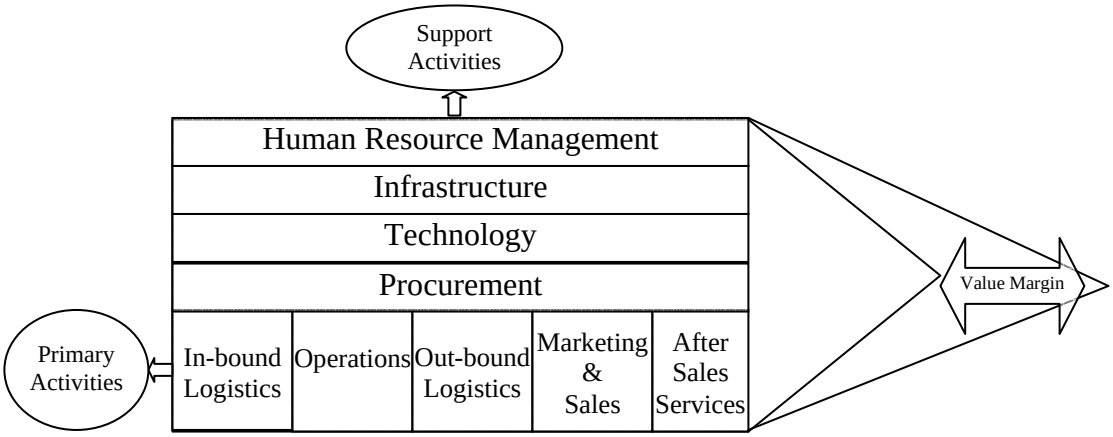

Figure 5: The Value Chain

The value chain model depicts following categories of training needs (See Figure5):

4.5.1. Primary Training Needs

These are the training needs of line departments, which are directly involved in strategy formulation and execution of the organization. Depending on the generic strategic option selected, primary training needs/objectives aim to mould the primary actitivities to target drivers of cost or differentiation accordingly. Training programs thus developed must, then, be termed as primary training programs.

4.5.2. Secondary/Support Training Needs

These are the training needs/objectives of the staff/support departments who facilitate the line departments in strategy formulation and execution. Depending on the generic strategic option selected, the secondary training needs aim to modify the secondary activities in organization, and crucially affect the success of primary training programs. Training programs thus developed must, then, be termed as secondary training programs.

4.5.3. Cross Training Needs

In order to effectively and efficiently exploit internal and external linkages between and within primary and support activities, the managers should be provided with the cross training. Cross training needs aim to capture the linkages between primary and support activities related with drivers of cost or differentiation.

The value chain activities, thus, can be used to ascertain about the possible training needs defined in terms of individual and group productivity requirement of the organization consistent with its competitive strategic intent.

5. Conclusion

Through above relationships and models, this paper has contributed to the existing body of knowledge about strategically oriented training interventions and their relevance with the competitive strategic management of the organization. The models postulated above are based on the grounded theory and exploratory evidence, further quantitative research is required, so as to confirm the strength of hypothesized relationships depicted in these models. The relationships theorized in the paper, nevertheless, would enhance understanding of the strategic relationships between training, productivity and competitive strategy of the organizations to achieve and maintain sustained competitive advantage. The revised models of strategic training process and strategic training need assessment have tried to elaborate strategic linkage between training program and competitive strategy. The discussion would also help both theorists and practitioners to fully capture the role of training effectiveness and, thereby, develop effective training programs consistent with the competitive strategy adopted by the organization.

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