THE IMPACT OF TRAINING ON KEY PERFORMANCE PARAMETERS
IN SELECTED FIRMS IN SERVICE INDUSTRY

ABSTRACT OF THESIS

Introduction

Changing face of industry from product oriented to customer oriented has led to change in the way organizations treat their customers. To deliver effective service to customers in changing environment, employees are a critical link (Snow and Yanovitch, 2003). A key challenge for future is how to train staff and create differentiation. (Barlow and Dianna, 2000). As quoted by Baldwin and Danielson (2003), training and learning is a key weapon in war for talent.

Training has been identified as a vital element of any corporate strategy (Buckly and Capel, 2000). Even though, training as a distinct field with its own roles, structures and budgets, training is still young; importance of training has been well recognized (Lynton and Pareek, 1990). This is evident from the fact that Membership of American Society for Training and Development has increased from 15 in 1943 to 15,000 presently across 100 countries. (http://www.astd.org, December 2003). In U.S. $10 billion spent on training in 1967 has increased to $90 billion in 1990, in developing country like India training spent has increased from $6 billion to $45 billion over similar period. (Lynton and Pareek, 1990). As quoted by Baldwin and Danielson (2003), training and learning is a key weapon in war for talent.
Evaluating the effectiveness of training has emerged as a critical issue (Suri, 2005). According to Leiserson (2005) in almost 80% of cases, no analysis on ROI on training is done. In cases where impact of training is evaluated, Rowe (1996) found that most organizations use 'happiness sheets' only, which are focused on training, training methodology and the organization of training facilities, not on learning and impact of training. Zalman (1991) defined training as, "the transfer of defined knowledge or skills that result in improved performance in an on-the-job situation." Hence, while evaluating effectiveness of training one needs to evaluate increase in knowledge and skill level, as well as improvement in performance, while isolating the impact of extraneous factors.

**Problem Statement**

Phillips (2003) has clearly stated that, even though executives intuitively feel that there is value in providing learning opportunities, logically anticipating a payoff in important bottom-line measures such as productivity improvements, quality enhancements, cost reductions, and time savings. **Yet the frustration comes from the lack of evidence to show that the training process is really working.** McArdle (1999) clearly mention that very little of investment in training is returned to the workplace. Similar view is also shared by Rothwell (2002) that managers complain that training is not as effective as they would like it to be in changing employee behaviour or improving work results.
Rowe (1996) found that, most organizations use “happiness sheets”, level 1 evaluation for delegates to complete at the end of training programmes – and do not tell anything about how effectively delegates have digested the material and will apply it in the workplace. Now, the emphasis has shifted to using data to monitor the efficiency and effectiveness of learning function, says Brenda Sugrue (Davenport, 2006).

Some studies have been conducted to evaluate the impact of training on learning. These studies demonstrate that training has been effective in improving knowledge and some skills of learner; little conclusive evidence is available to evaluate impact of training on business performance in India. Even in developed countries, only 30% of respondents evaluate their training (in relation to) behaviour-job impact (Berk, 2004).

This study examines the impact of training on business performance parameters. Specifically, this study addresses the following aspects concerning the impact of training on business performance parameters. Does training bring about substantial changes in the knowledge of employees? Does training bring about substantial changes in on-the-job skills of employees? Are the gains in knowledge and skills of employees, who were trained higher than of those, who were not trained? Does training bring about substantial change in business performance? Are gains in business performance for those who were trained higher than of those, who were not trained? Is there improvement in business performance with gains in knowledge and skills of employees?
Research Objectives

The overall purpose of this study is to evaluate impact of training on key business performance parameters in service industry. To accomplish this objective, the following objectives have been formulated. The objectives are to determine, for employees in service industry:

1. To find out whether training bring about substantial changes in the knowledge of employees
2. To find out whether training bring about substantial changes in on the job skills of the employees
3. To compare gains in knowledge and skills of employees, who were trained with that of those, who were not trained
4. To assess whether training bring about substantial change in business performance
5. To compare gains in business performance for those who were trained with that of those, who were not trained
6. To compare gains in business performance with gains in knowledge and skills of employees

Formulation of Hypotheses

The following hypotheses, in the directional format, are being formulated for realizing the objectives of the study. Null hypotheses and alternate hypotheses of this study are listed below:
H₀₁: Training will not impact the knowledge of sales and service executives in service industry

H₁₁. Training impacts the knowledge of the sales and service executives in service industry

H₀₂: Training will not impact on-the-job skill of sales and service executives in service industry

H₁₂. Training impacts on-the-job skills of the sales and service executives in service industry

H₀₃: Training will not impact business performance of sales and service executives in service industry

H₁₃. Training impacts the performance on key business parameters for sales and service executives in service industry

H₀₄: On-the-job skills of sales and service executive will not be significantly related to their knowledge

H₁₄. On-the-job skills of sales and service executive are significantly related to knowledge of executive

H₀₅: Performance on business parameters of sales and service executive will not be significantly related to their knowledge

H₁₅. Performance on business parameters of sales and service executives is significantly related to their knowledge

H₀₆: Performance on business parameters of sales and service executive will not be significantly related to their on-the-job skills
H₁₆: Performance on business parameters of sales and service executives is significantly related to their on-the-job skill

Literature Review

For the last 20 years there has been a substantial shift from the other two industry sectors to the Tertiary Sector in industrialized countries. (http://en.wikipedia.org/wiki/Tertiary_sector_of_industry, 2003). All products and services, irrespective of sector they belong to have tangible and intangible components.

Employees play a crucial role in delivering customer service. (Szwarc, 2005). To quote Keki Dadiseth “A Company is nothing without a collective intellect”; so in this millennium what is of prime importance is charging the organization’s emotional and intellectual energy. (Nicholsen (2000)). Hence, to deliver service, people are a critical link.

Zalman (1991) defined training as, “the transfer of defined knowledge or skills that result in improved performance in an on-the-job situation.” Hence, while evaluating effectiveness of training one needs to evaluate increase in knowledge and skill level, as well as improvement in performance, while isolating the impact of extraneous factors.

According to Patrik (1999) training is the tool to fulfil all three basic requirements, which organizations must have i.e. people retention, people performing task in dependable manner and people go beyond
their role and engage in some form of creative spontaneous and innovative behaviour at work.

According to Strayer (2003) training exists primarily to help people do a better job at getting the results an organization needs. Overall training gives the organization a competitive edge by keeping abreast of the latest changes; it acts as a catalyst for change (Towers, 2004).

Craig, 1976, defined various steps of training as Identification of training needs, develop training objective, design training curriculum, design/select training methods, design training evaluation methodology, conduct training programme and measure training results.

The two biggest challenges facing learning and development professionals are measuring learning effectiveness and communicating the impact of learning on the bottom line (Murray, 2004).

As part of this study, while evaluating impact on business performance, we are focusing on summative evaluation of training programme using Kirkpatrick model of training evaluation. The four levels of evaluation are reaction level, learning level, behaviour level and result. In this study we have evaluated training at learning level, behaviour level and result.
Research Procedure

Nature of Research

The nature of the present study suggests a hybrid design. To be specific, exploratory research is found to appropriate for identification of training requirements, defining of intermediate and final business results, finalization of tools for each organization.

Causal type of research also known as experimental research is used for evaluation of objectives, where pre-training and post-training results of control group and experimental group are compared and relationship is established between intermediate results and final business result.

In this study quasi-experiment research is conducted to evaluate impact of training on business results. The target group is divided in control group and experimental group and both groups work in same environment. While experimental group is provided with training, control groups are not provided with any training inputs. This helps to evaluate the impact of training while keeping the external factors constant.

SCOPE

Once, the linkage between training and key business performance parameter is established, this has the capacity to revolutionize approach of training towards skill enhancement and way organizations value training. This will benefit management, who will see return on their
investments in training and will use training as a tool to implement their strategic intent. This will also benefit training fraternity, who will be able to get management attention, commitment and resources. This will also benefit academic fraternity for further research.

Criteria for Selection of Sample Subjects

For the purpose of this study, sample was selected at different levels. As the first step sample organizations were selected followed by selection of control and experimental group in each organization. The following criteria were considered for the selection of the sample:

- **Selection of sample organization**: Sample organizations were selected from amongst the service organizations in India, through simple random selection (draw of lots). Universe was a list of top 59 service organizations in NCR was taken from ET-500 list for the year 2003. Chits were made of all the names of these service organizations, and two sample organizations were selected randomly without looking and without replacing. Two organizations, which were selected, were Bharti Televentures Limited and BSES Limited.

- **Selection of target groups**: Once the organizations were selected, next step was to select the control group and experimental group
in each organization. The details of sampling procedure and sample size are given below:

- **Bharti Televentures Limited**: Showroom executives from Bharti Televentures Limited were taken as sample. Out of total of seven zones, two zones were selected as experimental group through simple random sampling (draw of lots) and one showroom per zone was selected as control group through simple random sampling. All showrooms executives of two zones (57 executives) were taken as experimental group. One showroom from each of balance five zones comprising 26 executives were taken as control group.

- **BSES**: Call centre executives from BSES call centre were taken as sample. BSES has two divisions BSES Rajdhani Private Limited (BRPL) and BSES Yamuna Private Limited (BYPL), BRPL has been selected for this study by simple random sampling (draw of lots). All call centre executives working with BRPL has been selected as universe; of the universe of 50 executives with four supervisors in BRPL, all executives working with two supervisors are selected as experimental group through simple random sampling (draw of lots) and other two supervisors are taken as control group. Two supervisors with 24 executives were taken as experimental group and other two supervisors with 26 executives were taken as control group.
DATA COLLECTION AND ANALYSIS

Data Collection

The data has been collected from both sources i.e. primary and secondary sources. Secondary sources of data including books, journals on training and service industry and existing dissertation in this subject area along with internet have been referred for the purpose of this research.

Primary data has been collected from use of evaluation tools (written and schedule observation) and using organization data for performance evaluation. These tools were already in use in respective organizations and their reliability and validity was established. Validity test conducted on tools used for this study are internal validity, external validity, frame of reference and nested factors.

Written evaluation and schedule observation was conducted to collect data on employee knowledge and on-the-job skill level, where as business performance was evaluated through organizational data. In first organization performance is evaluated on average monthly sales per person, while in second organization performance is measured on customer satisfaction score, i.e. percentage of customers rating in top two boxes.
Data Analysis and Interpretation

Each of the relevant questions, under the respective Hypotheses; data has been analysed manually using single factor ANOVA, details are given below:

Grouping of Analysis Criteria

It would be appropriate to explain the rationale of grouping of analysis criteria. These analyses are conducted for each case study independently, to evaluate the hypotheses in each case.

- Pre-training comparison of experimental group vs control group was conducted to evaluate equivalence between experimental group and control group in terms of their knowledge scores, on-the-job skill evaluation scores and business results. This will ensure that the two groups are starting from a similar base line. This will also give credence to post-training comparisons. A t-test is conducted to evaluate if the difference between the groups is significant.

- Post-training comparison of experimental group vs control group was conducted to evaluate the difference in knowledge scores, on-the-job skill evaluation scores and business results between two groups. Difference of means between two groups is calculated, to evaluate if there is difference in the respective scores of two groups.
• Pre-training and post-training scores are measured and a comparison is done to evaluate, if the difference in pre-training and post-training scores is statistically significant. This comparison is done for parameters of knowledge scores, on-the-job skill evaluation scores and business results. This helps to establish if change in scores is significant even without training.

• Correlation between knowledge scores and on-the-job skill evaluation scores was calculated, to evaluate if change in one parameter leads to change in other parameter. This will help to establish cause-effect relationship between change in knowledge of employee and change in on-the-job skill of employee.

• Correlation between knowledge scores and business results was calculated, to evaluate if change in one parameter leads to change in other parameter. This will help to establish cause-effect relationship between change in knowledge of employee and change in business results.

• Correlation between on-the-job skill evaluation scores and business results was calculated, to evaluate if change in one parameter leads to change in other parameter. This will help to establish cause-effect relationship between change in on-the-job skill of employee and business results.
Evaluation of Null Hypotheses

Keeping in mind the objectives of study, following null hypothesis are formulated:

**H₀₁: The knowledge of sales and service executives will not be impacted by training**

**H₀₂: On the job skill of sales and service executives will not be impacted by training**

**H₀₃: Business performance of sales and service executives will not be impacted by training**

To test null hypotheses 1, 2 and 3, comparison between pre-training and post-training data for control group and experimental group was conducted. Difference of means and standard deviation was calculated. t-test was conducted to evaluate if the shift in pre-training and post-training scores is statistically significant at 99% significance (0.01) level. This analysis was conducted for knowledge scores, on job skill evaluation scores and business performance parameters of executive.

Value of t is calculated using formula:

\[ t = \frac{(M₁ - M₂)}{\sqrt{(\sigma₁^2/n₁ + \sigma₂^2/n₂) \times (1 - \gamma^2)}} \]

**H₀₄: On-the-job skills of sales and service executive will not be significantly related to their knowledge**
$H_05$: Performance on business parameters of sales and service executive will not be significantly related to their knowledge

$H_06$: Performance on business parameters of sales and service executive will not be significantly related to their on-the-job skills

To test null hypotheses 4, 5 and 6, correlation between two factors was calculated. Probable error was calculated using following formula:

\[ P.E.Y = 0.6745 \frac{(1-(Y^*Y))}{\sqrt{n}} \]

Comparison of correlation and probable error was conducted. If value of $Y > 6$ P.E., the correlation between two factors was considered as statistically significant.

Reliability of Data

The primary data collected are considered as quite reliable because these have been collected by using tools, for which internal and external validity has already been established.

To establish internal validity, data has been collected using tools and processes already existing in respective organizations. To ensure external validity, no obstructive measures of observation or data collection were used. Hence, observations can be correctly generalized to other unobserved situations.
**Dependability of Results**

As the present research has been conducted in an honest manner, for academic purpose only; for the purpose of this study control group and experimental groups are established. This has helped to establish frame of reference in the existing study, wherein relative comparisons examine what would have occurred without the training intervention or possibly the differences between experimental and control group.

The only way, the control group and experimental group differ in this study, was administration of training to experimental group, all other factors being same. Hence, impact of other factors has been neutralized.

**Difficulties faced**

The main difficulty faced in the process of data collection, was to convince the prospective organizations to allow the investigator to conduct this study, where employees performing same role will be divided in control group and experimental group and why all population should not be given training together.

Another major difficulty was faced while dealing with training teams in respective organizations; training teams were apprehensive that their performance will be evaluated through this exercise and if results are not found to be positive, action may be taken against them. This difficulty
was overcome by clearly stating that the study has been done as an academic exercise and same was assured by respective managements.

**Design and Implementation of the Instructional Experiment**

The present study is based upon pre test – post test design using two parallel groups of sample subjects i.e. the experimental and the control group. Two such experiments were conducted, to test the hypothesis for two different organizations in service industry. The entire study was conceived and implemented as depicted in the following steps:

- Selection of sample organizations
  - Formation of experimental group and control group
- Selection and training of observers
- Development of training methodology and training content
- Initial evaluation of target group
  - Establishment of equivalence of control group and experimental group
- Administration of training
  - Experimental group undergoes training
  - Control group does not undergoes any training
- Final evaluation of target group
Implementation of Instructional Experiment

As part of this study; study was conducted at two organizations. Details of these two studies are given in chapter IV and chapter V. These chapters give details of study at each organization covering organizational structure, parameters of evaluation, sample size, findings and analysis.

Chapter IV gives details of study at first organization, with Bharti Televenture Limited, where impact of training is evaluated on business parameter of monthly sales per person and evaluates correlation of business result with intermediate results of knowledge and on-the-job skill.

Chapter V gives details of study at second organization, with BSES Limited, where impact of training is evaluated on business parameter of customer satisfaction scores and evaluates correlation of business result with intermediate results of knowledge and on-the-job skill.

Conclusions and Implications

Findings Related To Hypotheses Number 1

*Training impacts the knowledge of the sales and service executives in service industry.*
As demonstrated by data in table 6.1 and 6.2, in both organizations, improvement in knowledge scores in case of experimental group has been greater than the improvement in knowledge scores of control group in similar time frame. Also, the positive shift in scores in experimental group has been found to be statistically significant in both organizations at 99% significance (0.01) level. However, shift in knowledge scores of control group in both organizations was not found to be statistically significant.

Also, there has not been any other difference in any environmental factors between the control group and experimental group, except the training of experimental group. This demonstrates that training does help to develop knowledge level of executives significantly.

Thus, the null hypotheses 1, 'H_0: Training will not impact the knowledge of sales and service executives in service industry', is rejected and alternate hypotheses 1, 'H_1: Training impacts the knowledge of the sales and service executives in service industry' is retained.

**Findings Related To Hypotheses Number 2**

*Training impacts on-the-job skills of the sales and service executives in service industry.*

As demonstrated by data in table 6.3 and 6.4, in both organizations, improvement in on-the-job skill evaluation scores in case of experimental
group has been greater than the improvement in on-the-job skill evaluation scores of control group in similar time frame. Also, the positive shift in scores in experimental group has been found to be statistically significant in both organizations at 99% significance (0.01) level. However, shift in on-the-job skill evaluation scores of control group in both organizations was not found to be statistically significant.

Also, there has not been any other difference in any environmental factors between the control group and experimental group, except the training of experimental group. This demonstrates that training does help to develop on-the-job skill level of executives significantly.

Thus, the null hypotheses 2, 'H₀₂: Training will not impact on-the-job skill of sales and service executives in service industry', is rejected and alternate hypotheses 2, 'H₁₂. Training impacts on-the-job skills of the sales and service executives in service industry' is retained.

**Findings Related To Hypotheses Number 3**

*Training impacts the performance on key business parameters*

In the present study, different business parameters are evaluated for each organization. In first organization, the business parameter considered was sales productivity i.e. average monthly sales per person. In second organization, the business parameter considered was customer satisfaction score i.e. number of customer rated the call in top two boxes.
As demonstrated by data in table 6.5 and 6.6, in both organizations, improvement in business result in case of experimental group has been greater than the improvement in business result of control group in similar time frame. Also, the positive shift in scores in experimental group has been found to be statistically significant in both organizations at 99% significance (0.01) level. However, shift in business result of control group in both organizations was not found to be statistically significant.

Also, there has not been any other difference in any environmental factors between the control group and experimental group, except the training of experimental group. This demonstrates that training does impact business performance of executives significantly.

Thus, the null hypotheses 3, 'H₀3: Training will not significantly impact business performance of sales and service executives in service industry', is rejected and alternate hypotheses 3, 'H₁3. Training impacts the performance on key business parameters' is retained.

Findings Related To Hypotheses Number 4

On-the-job skills of sales and service executive are significantly related to knowledge of executive

As demonstrated by data in table 6.7, in both case, value of $\gamma>6$ P.E., this clearly demonstrates that change in knowledge of executive will lead to change in skill evaluation scores for sales and service executives in
service industry. Thus increase in knowledge of executive will lead to better understanding of role and why and how to perform various task effectively.

Thus, the null hypotheses 4, 'H⁰₄: On-the-job skills of sales and service executive will not be significantly related to their knowledge', is rejected and alternate hypotheses 4, 'H₁₄. On-the-job skills of sales and service executive are significantly related to knowledge of executive' is retained.

**Findings Related To Hypotheses Number 5**

*Performance on business parameters of sales and service executives is significantly related to their knowledge*

As demonstrated by data in table 6.8, in Airtel value of γ>6 P.E., while in BSES value of γ<6 P.E. This demonstrates that while in first organization, the training intervention was focused to deliver the identified business parameter of sales productivity. Hence, this hypothesis can be retained for sales productivity of executives in service industry.

However, even though there has been a significant shift in knowledge scores for second organization, this is not resulting in corresponding shift in business parameter of customer satisfaction scores. This might be due to various reasons, which might be that knowledge needs to be converted to on-the-job skill before impact on business results can be
seen. Hence, this hypothesis can not be retained for customer satisfaction scores for this organization.

This demonstrate that improvement in knowledge may lead to better effectiveness on performance of individual in service industry, however, same can not be always true in soft skill areas, as quoted by Ravi, 2003. Thus, the null hypotheses 5, 'H₀₅: Performance on business parameters of sales and service executive will not be significantly related to their knowledge', is retained and alternate hypotheses is rejected.

**Findings Related To Hypotheses Number 6**

*Performance on business parameters of sales and service executives is significantly related to their on-the-job skill*

As demonstrated by data in table 6.9, In both cases value of \( Y > 6 \ P.E. \), this demonstrates that the training intervention was focused to develop skills of employees and deliver the identified business parameter of sales productivity and customer satisfaction score. Hence, in service industry, improvement in employee ability to perform his job better evaluated through on-the-job skill will have an impact on business performance.

Thus, the null hypotheses 6, 'H₀₆: Performance on business parameters of sales and service executive will not be significantly related to their on-the-job skills', is rejected and alternate hypotheses 6, 'H₁₆: Performance on business parameters of sales and service executives is significantly related to their on-the-job skill' is retained.
CONCLUSION

While conclusively evaluating the impact of training various researchers have used quasi-experimental research design to ensure that impact of extraneous factors be nullified. In this study also the control group and experimental group are clearly identified and divided physically. In case of first organization, the two groups were clearly segregated as people were sitting in separate showrooms, in case of second organization; the people were under different team leaders and sitting in different bays, though on same floor. In both organizations, every effort was made to ensure that there is no differentiation between in the control groups and experimental groups, with respect to policies, infrastructure or market condition. The only difference was administration of training to experimental group, which was absent in control group.

The output parameters of training were divided into intermediate results and final results. Intermediate results were in terms of knowledge scores and skill evaluation scores, which can be primarily influenced by training inputs. The final results were in terms of business parameters of sales productivity and customer satisfaction scores.

There has been a significant shift in intermediate results of knowledge scores and skill evaluation scores for the experimental group; there is also a correlation between improvement in knowledge scores and shift in skill evaluation scores.
The shift has been consistent in final result of sales productivity and customer satisfaction scores. The shift in sales productivity and customer satisfaction scores of experimental group has been significant. There is a positive correlation between employee on-the-job skill and business performance of sales productivity and customer satisfaction score.

However, while the correlation between knowledge scores and sales productivity has been found to be significant, the correlation between knowledge score of employees and customer satisfaction scores was not significant. This opens up areas for future research to identify the knowledge factors impacting customer satisfaction.

The positive impact of training on intermediate results of knowledge score and on-the-job skill evaluation score and business result parameter was also validated by number of other researchers. However, investigator was not able to find any existing literature analysing correlation between intermediate results and ultimate objective of training in corporate environment, though some research is available in field of sociology.

Yin, 1987 has clearly stated that case studies can not be generalized to theory automatically. A theory must be tested through replications of the findings in a second or even a third neighbourhood, where theory has specified that the same results should occur. Once such replication has
been made, the results might be accepted for a much larger number of similar neighbourhoods.

This has been an attempt by the investigator, where the focus has been on methodology of research.

**Direction for Future Research**

- Study with larger scope needs to be conducted covering larger sample size from all industry segments, covering diverse geographies and organization size to further validate the findings of this study.

- Further research is required to evaluate, if change in knowledge level of employee will result in change in business results, specifically in areas of soft skills and customer service.

- Further research is required to evaluate short-term and long-term benefits of training from business results and factors like reduced employee attrition, increased employee motivation and reduced absenteeism.

- Further research is required to the evaluate the impact of different steps in training cycle, like training need analysis, training content, methodology chosen or training delivery.

- Further research is required to evaluate return on investment on training.