CHAPTER V – FINDINGS, CONCLUSIONS & RECOMMENDATIONS

5.0 Preview

Key findings of this research study derived from data analysis are presented in this chapter. All the verticals in IT industry are considered for this study. All the hierarchical levels of an employee are also considered for taking primary data so that the results are expected to give an all inclusive picture of IT sector. The impact is analyzed at individual level, at managerial level and at a Strategic Business Unit level.

It is evident from this study that competency-based performance management is becoming more useful than the historical skill-based, transactional process. The nature of work is changing from single-skilled jobs to multi-skilled jobs, from repetitive tasks to problem-solving tasks, from individual work to teamwork, and from functional specialization to collaboration. Taking a look at the ways in which work is changing, it is necessary for organizations to move from skill-based performance to competencies based performance measures (CBPM).

This research focused on impact of CBPM on Individual, Managerial and Business Unit Performance in IT companies in Pune region. A literature review conducted (please refer chapter II - Literature Review) gave evidence of the lack of research on CBPM in IT companies in India. Hypotheses were formulated based on research objectives and Questionnaire was finalized based on Pilot study and Discussions with experts from the field and academicians (please refer Chapter III – Research Methodology). Primary data was collected and analyzed. Key findings of this research study were derived from data analysis (please refer Chapter IV – Data Analysis).

The findings of this research study, conclusions drawn and recommendations are presented in next sections of this chapter.
5.1 Key Literature review Findings

1) Competency approach to human resources management has been in practice for past 4 decades. The introduction of competency based approaches within the corporate environment was initiated around 1973. About 91 percent of organizations worldwide have a formal Performance Management (PM) system in place. Worldwide, in 2010, Business Intelligence, Analytics and Performance Management Software Market Surpassed $10 Billion, stressing the criticality of PM. Research in 2004 indicates, approximately one-third of organizations use CBPM systems.

2) The Gartner Group has identified enterprise-wide competency-based talent management systems as a mainstream trend and a wave of the future for organizations that want to gain the full value out of the investments they have made in their human capital.

3) There are few research studies which focused on impact of general HRM practices on business performance and some other on specific element (e.g. training) of competency on performance through case study approach. However, it has been found from the literature review that no specific research study has been conducted with respected to impact/relationship of Competency-Based Performance Measures on Business Performance in IT industry (either in India or Overseas) on approach level.

4) Following are the finding on Competency Based Performance Measures (CBPM) and Business Performance (BP) derived from various worldwide survey reports and Literature review:

   1. Several authors have described forces or trends facing organizations and how a competency-based approach can help by moving the focus away from jobs and toward individuals and their competencies. Others have said that Competency Management is a vitally important function and it plays core part of talent management strategy.
2. 40 percent organizations intend to make significant changes to their performance management systems – thus necessitating the need for research in this area.

3. Performance reviews are occurring more frequently — not just once a year.

4. 98% of ‘best in class’ companies use an employee performance management process.

5. More than 45 percent of HR managers rate “improvement of their performance management processes” as one of their top focus areas.

6. Performance Management concept still needs to grow in Indian corporate houses.

7. Research in 2004 indicates, approximately one-third of organizations use competency-based performance management systems.

8. Research shows that 86 percent of HR managers believe that competency management is critical to their success in performance management.

9. A survey of senior executives of multinational companies shows that improving performance management and budgeting and forecasting is a major priority.

10. 40% of the companies surveyed listed performance management as the top priority for 2009.

11. Defining competency based model is absolutely important. Competency Based Performance Management identifies and fills all the gaps at various levels. The current study therefore becomes necessary - which shows the impact of competency based performance measures (management) on business performance.

12. Research studies show that organizations have good or excellent leadership competencies, but 22 percent (nearly one in four) feel that their leadership competencies are poor or need revamping.

13. It is found that organizations are moving from a Jobs-based to a Competency-based approach but at low speed.

14. Poorer implementation of competency based human resource management models have resulted in lesser than expected outcomes in the organization. However, there is no record of losses due to this model.
15. Business performance management consists of a set of management and analytic processes, supported by technology, that enable businesses to define strategic goals and then measure and manage performance against those goals.

16. Core business performance management processes include financial planning, operational planning, business modeling, consolidation and reporting, analysis, and monitoring of key performance indicators linked to strategy.

17. Business performance measures have changed drastically over the period of time. They include Shareholder Perspective, Stakeholder Perspective, Balanced Scorecard (BSC), Economic Value Added, BSC with Triple Bottom Line, Customer Value Analysis, Total Quality Management and Six Sigma, Action Profit Linkage, Activity Based Costing and Sustainable Balanced Scorecard.

5) Indian IT industry is on the growth path since early 1990s – after the liberalization push. Its revenues (exports plus domestic) grew at a Compound Average Growth Rate of 16% between 2008-09 to 2012-13 to exceed $100 billion (approx Rs.4,63,900 crores), while IT industry’s contribution to national GDP grew from 1.2% to 7.5% (NASSCOM Report). Pune has acted as an important contributor (estimated at about 11.5 %) in this growth. The IT industry in Pune has come up a long way over the years. From a modest Rs. 700 crores of exports in 1995-96, IT industry exports from Pune region in 2012-13 have touched Rs.29,000 crores.

6) Following are examples of two multinational IT companies currently using the Competency-Based Performance Management Model worldwide:

a) Microsoft implemented a competence management system by defining more than 300 competencies in four categories (foundation, local and unique, global, and universal skills). Moreover, Microsoft expects that employees will know better what competencies are required and thus are better consumers of educational offers.

b) Before introducing a competence management system, Ericsson had individual solutions in each country, sometimes paper-based or based on databases or spreadsheets. Ericsson extended the SAP R/3 Personal Management Module and implemented a competency catalogue.
7) IT industry is expected to play a much bigger role in the new millennium in the growth of Indian economy. Defining and measuring competencies is crucial. A framework that is used as the foundation of an organization’s talent management strategy should ideally provide the link between human resources and tangible business outcomes. Relevant literature survey was done to list competencies in IT sector in Egypt (Kandeel & Wahba 2001), in Thailand (Booneka and Kiattikomol, 2008) and in India (Velayudhan, 2011).

After extensive literature review a Unified Matrix was developed to identify and understand all Business Performance measures relevant to the IT sector. These were categorized into major heads viz. Financial, Customer Focused, Internal Business Process based, Learning & Growth oriented, Competitor considerations, Strategic, Product and Processes with respect to Time and Quality, Resource and Infrastructure based, Agility and Flexibility based, Social Performance based and based on Environmental considerations.

The Competencies relevant for IT sector and consolidated Business Performance parameters in Unified Matrix as mentioned above were discussed with senior executives of IT companies, HR Consultants and advisors. As per their recommendation, competencies relevant to IT sector were narrowed down to 21 relevant ones and Business Performance parameters were narrowed down to 8 parameters (grouped in 4 categories) – and then they were considered for this study.

The 21 narrowed down competencies are:

The narrowed down 8 business performance parameters are:

<table>
<thead>
<tr>
<th>Financial</th>
<th>Customer related</th>
<th>Internal process</th>
<th>Learning &amp; growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.Revenue Growth</td>
<td>2.Customer Satisfaction</td>
<td>2.Project Delivery</td>
<td>2.Employee Productivity</td>
</tr>
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CBPM has five major elements or activities, viz.

a) Defining competencies of an individual
b) Competency-based employee recruitment and selection
c) Competency-based training and development
d) Competency-based performance appraisal, and
e) Competency-based employee rewards.

Defining and managing these five elements or activities is very critical for deriving desired performance.

These formed the basis of Questionnaire (please refer to Annexure 1) which was used in collection of primary data from 313 respondents. The primary data was analyzed statistically.
5.2 Qualitative Findings of Current Research study

HR heads are in charge of measuring and evaluating the competencies of employees and providing the required training and development programs. After discussion with various HR heads of software companies it is found that there are gaps between the potential and actual performance of HR practices, in terms of services provided to accomplish its mission. This gap resulted from following limitations in the current system:

1. An inability to measure the real performance of employees. Current appraisal system only measures the technical skills that employees should have in order to accomplish their tasks. These skills are determined according to the annual plan. There is no management system that is capable of measuring the behavioral skills that employees must demonstrate, skills which have a competitive advantage, and can distinguish employees from others.

2. The current system doesn’t provide the importance for the competencies that are considered essential to each employee. These competencies should link employees’ performance with organizational mission and vision. There is a need for a new model that can foster positive outcomes with customers and suppliers.

3. The HR department does not have a training plan linked to strategic objectives. The offered training lacks the ability to provide the employees with the required competencies that are important to improve their performance, as well as align HR management practices with the mission, vision, values, and business strategies or objectives of the company.

4. The current system utilizes a traditional recruitment and selection process. It depends mainly on screening the applicants, then comparing their qualifications to job requirements by means of interviews. This method makes it difficult to attract individuals with specific characteristics or competencies that cannot be acquired by training or development. Although the selected persons are likely to fit in their work roles, there is a need for new selection methods that provide insight into whether or not a new employee will fit in the organization's culture.
5.3 Quantitative Findings based on statistical analysis

Following are the findings derived from current research to study relationship of CBPM on Business Performance in Pune’s IT companies. The linkage of CBPM to BP in IT sector companies was established as follows - Five major elements of CBPM were considered: i.e. defining competency, recruitment & selection; training & development; appraisal, and rewards. The questionnaire incorporated the 21 narrowed down competencies, on which the respondents were asked to evaluate the relationship of CBPM with BP. Further, Likert’s scale was used to rate the narrowed down 8 business performance parameters as mentioned above.

5.3.1 Reliability of Instrument, Data Distribution and Randomness of Samples

a) Since this study attempts to find out the causal relationship of the independent variable (CBPM) on dependent variable (BP), Cronbach’s alpha was considered as an adequate index of the inter-item consistency and reliability of independent and dependent variables. The Reliability Analysis shows that Cronbach’s Alpha = 0.934. Since this is greater than 0.7 there is good internal consistency in the instrument (i.e. questionnaire).

b) Further, Kolmogorov-Smirnov (KS) Test was used for Normal Distribution Analysis, i.e. to check how variables are distributed. This test indicates that since the P-value (Asymptotic Sig. – 2 tailed) is less than 0.05, data distribution is across a Normal Curve.

c) Further, Run Test was used to test whether the cases of samples are in random fashion. The analysis shows impact of CBPM on Individual, Managerial and Organizational performance, including the rating in each of these 3 (which was the subsection in the questionnaire), is in random fashion and is having significant values (i.e. Asymptotic Sig. is greater than 0.05). This indicates and confirms that the samples have been randomly chosen for collecting the primary data.
5.3.2 CBPM by Types of Organization

All types of software verticals from IT sector are considered for this study. CBPM model leads to different results for different software verticals. Study shows that all the software verticals agree that CBPM has an impact on Business Performance (average mean is 3.11 on a scale of 1 to 5). ITES and BPO vertical says CBPM leads to more impact on Business Performance (mean is 3.48) whereas as Hardware vertical indicates less impact (mean is 2.80). All the verticals are not showing similar impact. Significance is 0.000

5.3.3 CBPM by Hierarchical levels

a) Respondents represent all hierarchical levels i.e. lower management, middle management and top management. The study shows that the impact of CBPM on Business performance is not similar between the hierarchical groups (ANOVA, sig. is 0.000). b) Defining CBPM model at Lower Level Management (mean 3.23) has more impact than Top Level Management (mean 2.93) on the business performance. Defining CBPM model at Middle Level Management (mean 3.07) has more impact than Top Level Management (mean 2.93) on the business performance. This confirms the logic that IT sector being HR intensive sector, defining CBPM model for Lower and Middle Level Management is more critical than Top Level Management.

5.3.4 CBPM on Individual Performance

The study shows that, 304 respondents out of 313 say that CBPM impacts the individual performance positively. A significant majority of respondents, i.e. a total of 52.8% says that Competency Based Performance Measures (management) have a High or Extremely High level of impact on individual performance : 48.6% say this to be to the extent of 4 out of 5, while 4.2% say this to be to the extent of 5 out of 5. The average mean is 3.27. This means that competency based performance management model has an impact on individual performance. The impact is to the extent of “Average Positive Impact to High Positive Impact”.

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5.3.5 CBPM on Managerial Performance

The study shows that CBPM model is better than traditional human capital management methods. IT companies should go for CBPM approach. The study shows that 89.1% (279 out of 313) respondents say that Competency Based Performance Measures (management) have better impact on managerial performance than traditional measures. A significant majority of respondents, i.e. a total of 44.7% says that Competency Based Performance Measures (management) have a High or Extremely High level of impact on managerial performance than traditional measures: 37.7% say this to be to the extent of 4 out of 5, while 7.0% say this to be to the extent of 5 out of 5. The average mean is 2.96, which can be rounded off to 3, indicating “Average Positive Impact”. This means that on an average Competency Based Performance Measures (management) have significant impact on managerial performance than traditional measures.

5.3.6 CBPM on Business Performance

The literature review shows that whole approach in the past one and half decades regarding the improvement of organizational performance shifted to the endorsement of people and their competencies. This statement holds true in Indian IT companies with respect to Pune region. The current study shows that 94.9% (297 out of 313) respondents say that competency based performance management has the positive impact on Business performance of an Organization. A significant majority of respondents, i.e. a total of 55.6% says that Competency Based Performance Measures (management) have a High or Extremely High level of impact on business performance: 47.0% say this to be to the extent of 4 out of 5, while 8.6% say this to be to the extent of 5 out of 5. The average mean is 3.27. This means that Competency Based Performance Management has an impact on Business performance, which is between “Average Positive Impact to High Positive Impact”.

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5.4 Hypothesis Testing

Following are the results of hypothesis testing:

5.4.1 Hypothesis H1
The general finding and all statistical analyses show that competency based performance measures (management) are positively related to an individual’s performance. Hence, Hypothesis 1 is accepted.

5.4.2 Hypothesis H2
The general finding and all statistical analyses show that competency based performance measures (management) are positively related to managerial performance than traditional measures. Hence, Hypothesis 2 is accepted.

5.4.3 Hypothesis H3
The general finding and all statistical analyses show that competency based performance measures (management) are positively related to business performance. Hence, Hypothesis 3 is accepted.

5.4.4 Hypothesis H4
The study shows that the impact of CBPM on Business Performance is significant. The impact is more or less similar (equal) by each elements (i.e. defining competencies; recruitment and selection; training and development; performance appraisal and employee reward) on Business Performance. Hence, Hypothesis 4 is accepted.

5.4.5 Hypothesis H5
It is seen from the analysis that impact of CBPM on each Business Performance parameters (i.e. Cost reduction, Revenue Growth, Market share, Customer satisfaction, Innovation, Project Delivery Process, Employee retention and Employee productivity) is not equal. Hence, Hypothesis 5 is rejected.
5.5 Path Analysis
The study shows that highest impacting path is CBPM => Employee Productivity => Revenue Growth. In this case the impact is 0.8155. The least impacting path is CBPM => Innovation => Cost Reduction (Impact is 0.197). CBPM has more impact on employee productivity. The end result of CBPM is Revenue Growth. Revenue growth has appeared four times in top five paths. This also is in conformity of the logic that IT sector being an Human Resource intensive sector, employee productivity is critical to higher revenue growth, leading to a better business performance

It clearly emerges from this study that CBPM has a great impact on business performance.

5.6 Interpretive Structural Modeling (ISM)
Following are the observations based on the results of ISM-based model:

a) The results of the survey indicated that Revenue Growth and Market Share are among the top-level variables (i.e. business performance parameters).

b) Innovation is at the lowest level in the model. However, ISM model suggests that it has a very high driving power. It could be attributed that CBPM leads to innovation and which in turn improves the processes and product which influences business performance.

c) It is further observed from the ISM-based model that the variables such as Project Delivery, Employee Productivity and Employee Retention are at the lowest level in the model with greater driving power.

d) It is observed that four variables viz. Innovation, Project Delivery, Employee Productivity and Employee Retention have strong driving power and are less dependent on other variables. Therefore, these are strong variables and may be treated as the root cause of all other variables.
5.7 Research Conclusion

This research project endeavored to bridge the gap in literature between the Competency-based performance measures / management (CBPM) and its relationship with business performance in context of IT sector companies in Pune region. A scale was developed to test the proposed model. This study revealed that CBPM model impacts business performance. It was found that CBPM impacts Employee Productivity (through individual performance) and this in turn impacts the Revenue Growth. It was also brought out that CBPM are better favoured against traditional human capital measures which is expected to result in better organizational performance as individual employees contribute to the maximum extent in an IT company. This implies that implementation of CBPM will be a big exercise for IT sector companies. A practical outcome of this research is an improved understanding of impact of CBPM on performance of IT industry. The impact is seen from individual, managerial and organizational perspective. Organizations that are not using CBPM model may think of using it, since an attempt has been made in this research study to reduce the complexity of using CBPM models. Competencies vary from one IT company to another IT company. However, CBPM model and methodology of implementation will remain same across the companies.

5.8 Recommendations

It is clear from this research study that CBPM impacts individual, managerial and business performance in IT industry. Therefore, it is recommended that all IT verticals / companies may go for implementing CBPM model. Defining appropriate competencies required for the work based on organizational goals and vision would be critical. Therefore it is recommended that companies must design a methodology to define competencies and incorporate them in entire cycle from recruitment of a human resource, its assessment & rewards and finally at the time of its exit from the company.
5.9 Limitations

Limitations of the study are summarized below:

1) A bias may lie in the sample selection method as only one questionnaire was sent to each company, thus the person who answered the questionnaire may not be representative for all employees in the company.

2) Out of a large number of competencies, this study narrowed down 21 competencies as relevant. There may be other competencies which may be considered as critical by IT sector companies.

3) This study also narrowed down 8 business performance parameters and IT companies may look at other business performance parameters being important.

4) Different IT verticals have given varied level of acceptance to CBPM. This may be because of the reason that perception of CBPM becomes a limiting factor for underlining its importance.

5) Implementation of CBPM is limited in India. Combining detailed case study and a large survey would be an ideal method for researchers in the CBPM field.
5.10 Contribution to Body of Knowledge

1) Literature review showed approach to BP shifted to endorsement of people and their competencies which was confirmed by 94.9% of respondents.

2) Enterprise-wide competency based talent management system is a mainstream trend since companies want full value out of HR investment.

3) In a performance management framework, defining competencies is vital. Hence, as a starting point, organizations must design a methodology to define competencies.

4) In Pune’s IT sector companies CBPM model leads to different impacts on different verticals – with ITES/BPO its higher and Hardware its lower.

5) Highest impacting path for CBPM is Employee Productivity to Revenue Growth, while least impacting is Innovation to Cost Reduction. Which is why Indian IT companies need to invest in making employees more competent and in turn productive – so as to maximize revenue growth and stakeholder returns.

6) Factors affecting BP in descending order are : Revenue Growth & Market Share, followed by Customer Satisfaction & Cost Reduction.

7) Recruitment, training, performance evaluation and rewards should be linked to competency base for deriving maximum potential of an employee and then directing it to improved business performance.

8) Defining CBPM at lower management level has higher impact on BP. Hence, IT industry (being HR intensive) should use a bottom-up approach in CBPM to drive BP.

9) Since CBPM impacts BP it is recommended that all IT companies may go for its implementation.
5.11 Future Research Directions

The researcher identifies several research directions for CBPM in IT industry. Following is the list of related areas or questions of a CBPM which may be studied:

1. Business and People Competency Management in IT sector
2. Competency-Based Management and Global Competencies – Challenges for IT sector.
3. Analytical Study of Competencies and Skills with Special reference to ITES vertical IT industry in Pune (since this vertical has shown highest impact / sensitivity to CBPM).
4. Building an IT Risk Management Competency within the IT sector.
5. Competency Models for Human Resource Development
6. Supporting Competence Management in Software industry
8. Analyzing Core Competence And Value Add Of Small Software Firms.
10. Ranking Competencies of Software Developers in IT sector.
11. Competencies and Competency Models: Does One size Fit All.
12. Measuring the ROI of Competency Management in IT sector
13. Managing Competencies within big corporate and small entrepreneurial ventures : A Comparative Institutional Analysis of Software Firms
14. An Assessment of Technological Competencies on Professional Service IT sector
15. Modeling competencies for supporting work-integrated learning in knowledge work in IT sector.
5.12 Chapter Conclusions

This study was aimed at improving understanding of CBPM in IT companies in Pune region. A scale has been developed to test the proposed model. This study revealed that the CBPM model impacts performance. It is found that CBPM impacts Employee Productivity and this in turn impacts the revenue Growth. Implementation of CBPM will be a big exercise for the companies. This can be long-term assignment. The factors affecting CBPM implementation such as cost, resource and time also need to be considered. Combined detailed case study and a large survey would be an ideal method to researchers in the CBPM field. The extent of research into CBPM in an IT companies is still extremely low compared to how much money is invested in CBPM implementations.

This research study was intended to provide both theoretical and practical new insights into the impact of CBPM on performance. It is hoped that the theory and research findings presented in this dissertation can facilitate in better understanding on impact of CBPM on overall business performance.