

# A Study of Job Satisfaction in Software Industry– Myths and Realities

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## Abstract—

**O**ne of the crucial problems in the modern Industrial organisations is the development of efficient, committed and satisfied labour force. The academicians are always worried to know the factors that govern the development of the job satisfaction among the workers in the industrial set up. The construction (development) of software is different from the products of other manufacturing system. Software development is an inherently human endeavour. We view job satisfaction as emerging from a variety of factors, including characteristics of the organizational environment, specific features of the job, Human Resource Practices and the personal characteristics of the employee. Job satisfaction has been widely studied. Researchers have noted that job satisfaction is directly related to employee turnover/retention rates and absenteeism and indirectly to job performance and productivity. In software industry, the software practitioners are highly paid employees, they are given lucrative salary/package, welfare facilities and so many other things, but they do not have their own time, or working hour limits. They have no or least social and family relations and responsibilities either. The new working mode – online work or work-at-home culture of software industry has compelled its employees to be 24-hour with the company, even at home or on travel. These employees have some sort of discontent in their mind, particularly for their social relations. These employees are suffering from both ‘fatigue and monotony syndrome’. Greater satisfaction or to improve employee’s commitment to work in IT/ICT industry can contribute to greater market share and return on investment, lower manufacturing costs; improve productivity and improve the area of strategic performance.

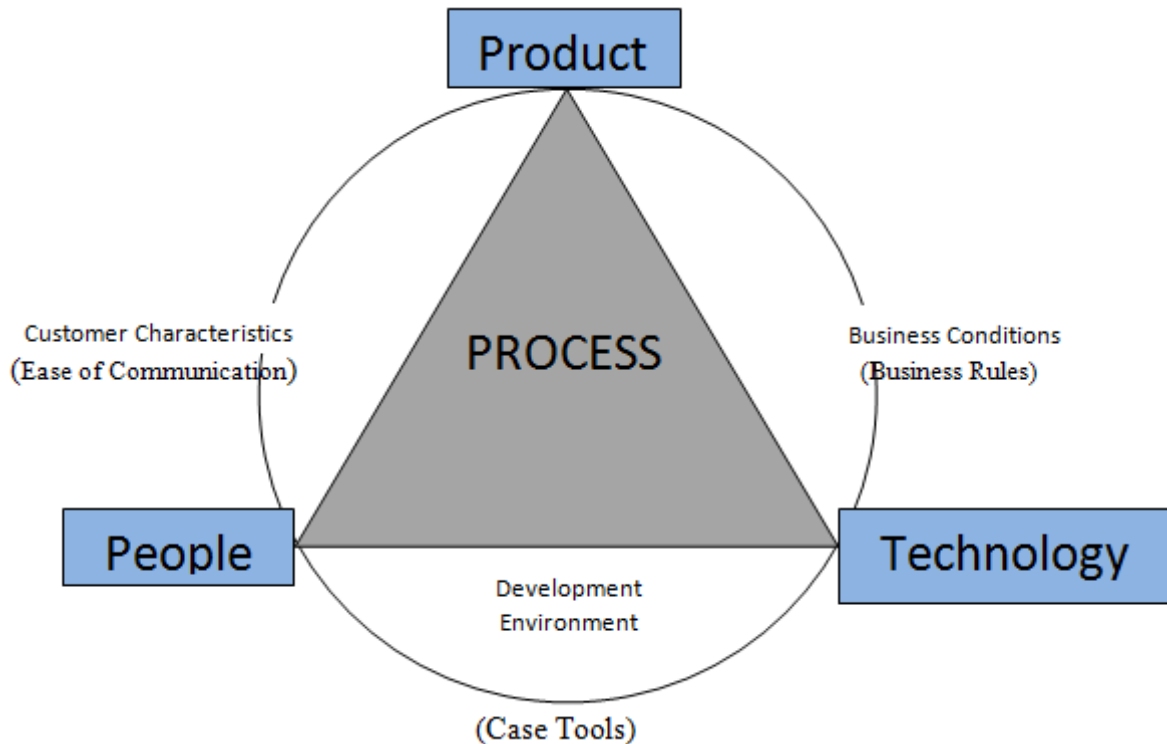
**Keywords—** Software, Human Resources, Job satisfaction, Return on Investment, TQM.

## I. INTRODUCTION

One of the crucial problems in the modern Industrial organisations is the development of efficient, committed and satisfied labour force. The academicians and practitioners of Personnel Management are always worried to know the factors that govern the development of the job satisfaction among the workers in the industrial set up.

Prior to Herzberg’s two factor theory it was assumed that the level of satisfaction can simply be elevated by increasing the level of financial incentive among the employees. But researchers in human relations have proved it beyond doubt that employees are not merely a factor of production but they necessarily want recognition, praise, worthiness, pride, dignity, and status from the job and the organisation.

Software development industry is a little bit different from other industries because the end product of this industry is a product that is not physical. The construction (development) of software is different from the products of other manufacturing system. Software development is an inherently human endeavour. It is not a process (although process helps), and it is not a science (although science also helps). If it simply were a process, then anyone could in a very short period of time learn to do it. If it were a science, you could give the same problem to a dozen tu to solve and you would get the same results from each of them. Experience tells us that neither of these things is in fact true. If it is not a process, and it is not a science, then what is it? Before answering that, consider that no two software solutions are ever alike – or at least they shouldn’t be. If you find that you are creating a software solution that is exactly like something else that already exists, you should seriously reconsider what you are doing because either you are a) copying on someone else’s copyright or patent or b) wasting time and money solving a problem that someone else has already solved. Implicitly this means that for each new project you begin, you must “create” a new solution. In other words, you are dreaming up a new way to solve a problem. This means that to “create” a new solution, you need – well... creativity. Creativity is an intangible. It is highly unique to each individual. It cannot be measured and for the most part cannot be taught. We often refer to this intangible as an art. Hence, who are the people who populate a team is very, very important in the context of software development. There are so many factors to be considered for the software quality and organisational effectiveness – People, Product, Process, Technology, Development Environment, customer characteristics, and Business Environment. Among all these, People are the most important factor. In the figure given below the Process sits in the centre of a triangle connecting three factors that have a profound influence on software quality and organisational performance. The skill and motivational factor of people has been shown to be the single most influential factor in quality and performance (Boehm, B., 81).



The Indian software industry has put great impetus on Indian Economy. Job satisfaction is the most vital factor of software industry. It has played a pivotal role in placing India on the global map. Almost all leading software industry avails the talent and skill of Indian software professionals. The Indian IT/ICT industry has emerged as a key growth engine for the economy, contributing around 5.6% to the country's Gross Domestic Product (GDP) in FY 2010 (Jyothi & Ravindran, 2012).

In software industry, it has been learnt that the software practitioners are highly paid employees, they are given lucrative salary/package, welfare facilities and so many other things, but one thing is important that the software practitioners do not have their own time, or working hour limits. They have no or least social and family relations and responsibilities either. The new working mode – online work or work-at-home culture of software industry has compelled its employees to be 24-hour with the company, even at home or on travel. Although, these employees are highly paid, yet some sort of discontent remains in their mind, particularly for their social relations and responsibilities, their relations with kith and kin. They are hardly given leaves, even in harsh or crucial situations. These employees are suffering from both 'fatigue and monotony syndrome'. The question arises:

- Are these employees satisfied with their jobs?
- Is money the only factor of job satisfaction?
- Shouldn't these employees bear their family or social responsibilities?
- Doesn't this affect the quality of product, and ultimately the productivity?

## **II. OBJECTIVES**

The main objective of this study is, to analyze job satisfaction of employees working in Software and ICT companies with respect to core HR practices. Efforts will be taken to know the challenges in the IT/ICT sector for the employees in obtaining Job Satisfaction.

## **III. REVIEW OF LITERATURE**

Maslow's Need Hierarchy theory, a motivation theory, laid the foundation for job satisfaction theory which explains that people seek to satisfy five specific needs in life – physiological needs, safety needs, social needs, self-esteem needs, and self-actualization need. This model served as a good basis from which early researchers could develop job satisfaction theories. Job satisfaction can also be seen within the broader context of the range of issues which affect an individual's experience of work, or their quality of working life. Job satisfaction can be understood in terms of its relationships with other key factors, such as general well-being, stress at work, control at work, home-work interface, and working conditions (Pidikoti, Chand, Mohan, Lakshmana, 2014). In this paper the focus is on the employees who serve software industries usually called IT or ICT industries. These people are called "knowledge workers". The major jobs of these people are logical, knowledge and intelligence-oriented for the construction (development) of software product. These jobs include - the programming, analysis, design, testing, collection of facts, manipulation, interpretation and communication of information etc. We view job satisfaction as emerging from a variety of factors, including characteristics of the organizational environment, specific features of the job, Human Resource Practices and the personal characteristics of the employee. Job satisfaction has been widely researched both in terms of its determinants and its predictive power.

Researchers have noted that job satisfaction is directly related to employee turnover/retention rates and absenteeism and indirectly to job performance and productivity (Shore, Newton et. al. 1990).

Research has confirmed the strategic benefits of quality programs and better quality is proven to contribute to greater market share and return on investment (Cole, 1992; Philips et al., 1983), lower manufacturing costs; improve productivity (Garvin, 1983) and improve the area of strategic performance (Zhang,2000).

TQM literature shows the relationship between TQM and employees' job satisfaction in various countries and in various industries (for example, Guimaraes, 1996, 1997; Gardner and Carlopio, 1996; Lam, 1995, 1996; Noorliza,1999; Noorliza and Zainal, 2000; Boselie and Wiele, 2002). The results of the study of Ankur Jain (2010) revealed that where teamwork and cooperation was perceived as a dominant TQM practice, there was a strong association with job satisfaction.

#### **IV. DEFINITIONS OF JOB SATISFACTION:**

**Bullock (1952)** define job satisfaction "as an attitude which results from a balancing summation between specific liking and disliking as a factor of expressing and connections associated with one job".

**Loche (1969)** defines job satisfaction "as a combination of satisfaction and job dissatisfaction in emotional relations and values, perception of the job".

**McCormick and Tiffin (1971)** defines job satisfaction from the various aspect (involved in the job). According to them – "job satisfaction is an individual's matter related to his own value system like work, income, promotional avenues and morale".

**Keith Davis (1979)** defines job satisfaction "as a factor responsible for deteriorating condition in the organisation. In its sinister form it manifests wild cat strike, slow down, absenteeism, labour turnover, grievances, disciplinary problems, low productivity and organisational difficulties.

**Groenfeld** was of the opinion that job satisfaction is a product of relative importance of various job characteristics.

Therefore, it is evident from the facts gathered so far that there is no gainsaying the importance of job satisfaction in any organisation. If a worker is not satisfied with his work, then both the quantity and quality of his output will suffer. If his job satisfaction increases then there is an improvement in both quality and quantity of production".

#### **V. DETERMINANTS OF JOB SATISFACTION**

The following are the factors which operate as its determinants:-

**5.1 Attending and solving problems.** It is very natural that there is problem everywhere so in the industry. Therefore, problems of workers be heard patiently and utmost care should be taken to solve these problems so that workers might not lose confidence in the management and become frustrated.

**5.2 Satisfactory future.** Workers' future vests with the expected promotion and improvement in pay scales at the right time. Hence, they want their due promotion at the right time then in that case they feel satisfied and become confident of his future. Otherwise, they become slack in his work.

**5.3 Testing the workers' ability and progress.** It is the normal concept that every worker should be paid according to his ability. If one has acquired some special technique and knowledge regarding the job assigned to him, he must be compensated for his better ability through a rise in salary. If this view is kept in mind by the management, then there is high degree of job satisfaction among the workers. If on the other hand, this view is overlooked by the management then worker doesnot often try to improve levels of efficiency because he feels that his efficiency is not related with promotion and in this way organisation suffers in the long run.

**5.4 Respect for creative suggestions.** Normally, workers under a particular set of conditions are best qualified to suggest ways of improvement. If workers are encouraged to give suggestions then they come-up with valuable ideas and this helps in increasing job satisfaction. On the other hand, if suggestions are neglected they become dissatisfied and improvement in the conditions in which he works is not possible.

**5.5 Cordial Analysis or Evaluation of the works.** If the mistakes of workers' are analysed or evaluated and suggestions are made to eliminate the mistakes, if any, in a cordial or friendly manner by the manager or supervisor then job satisfaction of the worker is maintained. But if the workers are bitterly criticised for their mistakes they lose their peace of mind, morale and self-confidence.

**5.6 Increase in wage.** Rules governing increase in salary should be clear and above board and should be acted upon impartially and regularly. If the worker gets the expected increases in salary at the right time, he or she feels satisfied with his/her job. If this does not happen, dissatisfaction is the result. Hence, increase in salary is, in fact, the most important factor in job satisfaction.

**5.7 Praise for good performance.** If the performance of a worker is up to the satisfaction then he must be praised for his credit. A word of respect is desirable to him, otherwise he would do his job only to pass the time allotted to him and the result will be dissatisfaction from his job. Therefore, in this situation his or her efficiency will be certainly affected and ultimately in the long run, the organisation suffers.

**5.8 Ability based promotion.** Ability of the worker should be considered as the vital criteria for his or her promotion. It is the established facts that every brain (intelligence) is different from the other, and software is the product of human intelligence. The person, who is performing well, is extraordinary, then the person must be awarded, and the best award would certainly be in the form of "promotion". In such a situation, his or her morale would be high, self-confidence will boost-up, he/she would be

applying his/her efforts in more creative way, and he or she would be discharging his/her duties in a fine fatal. Hence, this principle must be certainly and strictly followed.

**5.9 Proper quantum of work.** If job satisfaction is to be maintained, it is essential that quantity of work does not exceed the individual's ability to complete it. If he/she has to work more than his ability the worker will become disgusted and depressed.

**5.10 Equal wages for equal work.** There should be a policy of equal wages for equal work. If this policy is strictly followed the worker feels satisfied otherwise, loses satisfaction.

**5.11 Guidance or help from senior.** If the worker feels problems in accomplishing his/her tasks, he/she must be free to seek help from their seniors or fellow workers, and the seniors and fellow workers must welcome such situations and must give proper guidance and help to them. This will certainly make the workers free from fear of errors and will increase the self confidence and performance, leading to enhanced productivity.

## **VI. TOTAL QUALITY MANAGEMENT AND JOB SATISFACTION**

TQM does have significant impact on personnel attitudes towards their job and the organization. The development of TQM practices should provide useful measures for investigating the relationship between TQM practices and job satisfaction particularly in relation to the Indian software organizations. (A. Jain, 2010)

## **VII. EMPLOYEES' PERFORMANCE: AN IMPORTANT FACTOR OF JOB SATISFACTION**

It has been observed that well performing workers have high morale, high self-confidence and higher rate of creativity, resulting to high productivity in their works. Performance appraisal has become a continuous process by which an employee's understanding of a company's goals and his or her progress toward contributing to them are measured. Performance measurement is an ongoing activity for all managers and their subordinates.

## **VIII. SIXTEEN WAYS TO MEASURE EMPLOYEE PERFORMANCE**

(By David Hakala on February 19, 2008)

Performance measurement uses the following indicators of performance, as well as assessments of those indicators.

**8.1. Quantity:** The number of units produced or processed is a good objective indicator of performance. Too much emphasis on quantity will lead to poor quality.

**8.2. Quality:** The quality of work performed can be measured by several means. The percentage of work output that must be redone or is rejected is one such indicator.

**8.3. Timeliness:** How fast work is performed is another performance indicator that should be used with caution. In field service, the average customer's downtime is a good indicator of timeliness. In manufacturing, it might be the number of units produced per hour. In the field of how strictly schedules are followed would be an indicator.

**8.4. Cost-Effectiveness:** The cost of work performed should be used as a measure of performance only if the employee has some degree of control over costs.

**8.5. Absenteeism/Tardiness:** An employee is obviously not performing when he or she is not at work. Other employees' performance may be adversely impacted by absences, too.

**8.6. Creativity:** It can be difficult to quantify creativity as a performance indicator, but in many white-collar jobs, it is vitally important. Supervisors and employees should keep track of creative work examples and attempt to quantify them. In the field of software industry, creativity is an important factor of performance appraisal.

**8.7. Adherence to Policy:** This may seem to be the opposite of creativity, but it is merely a boundary on creativity. Deviations from policy, standards and norms indicate an employee's performance goals are not well aligned with those of the company.

**8.8. Gossip and Other Personal Habits:** They may not seem performance-related to the employee, but some personal habits, like gossip, can detract from job performance and interfere with the performance of others. The specific behaviours should be defined, and goals should be set for reducing their frequency.

**8.9. Personal Appearance/Grooming:** Most people know how to dress for work, but in many organizations, there is at least one employee who needs to be told. Examples of inappropriate appearance and grooming should be spelled out, their effects upon the employee's performance and that of others explained, and corrective actions defined.

Performance indicators must be assessed by some means in order to measure performance itself. Here are some of the ways in which performance is assessed from the aforementioned indicators.

**8.10. Manager Appraisal:** A manager appraises the employee's performance and delivers the appraisal to the employee. Manager appraisal is by nature top-down and does not encourage the employee's active participation. It is often met with resistance, because the employee has no investment in its development.

**8.11. Self-Appraisal:** The employee appraises his or her own performance, in many cases comparing the self-appraisal to management's review. Often, self-appraisals can highlight discrepancies between what the employee and management think are important performance factors and provide mutual feedback for meaningful adjustment of expectations.

**8.12. Peer Appraisal:** Employees in similar positions appraise an employee's performance. This method is based on the assumption that co-workers are most familiar with an employee's performance. Peer appraisal has long been used successfully in manufacturing environments, where objective criteria such as units produced prevail. Recently, peer appraisal has expanded to white-collar professions, where soft criteria such as "works well with others" can lead to

ambiguous appraisals. Peer appraisals are often effective at focusing an employee's attention on undesirable behaviours and motivating change.

**8.13. Team Appraisal:** Similar to peer appraisal in that members of a team, who may hold different positions, are asked to appraise each other's work and work styles. This approach assumes that the team's objectives and each member's expected contribution have been clearly defined.

**8.14. Assessment Centre:** The employee is appraised by professional assessors who may evaluate simulated or actual work activities. Objectivity is one advantage of assessment centres, which produce reviews that are not clouded by personal relationships with employees.

**8.15. 360-Degree or "Full-Circle" Appraisal:** The employee's performance is appraised by everyone with whom he or she interacts, including managers, peers, customers and members of other departments. This is the most comprehensive and expensive way to measure performance, and it is generally reserved for key employees.

**8.16. MBO (Management by Objectives):** The employee's achievement of objective goals set in concert with his or her manager is assessed. The MBO process begins with action statements such as, "reduce rejected parts to 5 percent." Ongoing monitoring and review of objectives keeps the employee focused on achieving goals. At the annual review, progress toward objectives is assessed, and new goals are set.

There are as many indicators of performance as there are companies and jobs. The various assessment methods can be used in combinations. It is important to choose indicators that align with company's goals and assessment methods that effectively appraise those indicators.

**8.17 Superior-subordinate communication:** It is an important influence on job satisfaction in the workplace. The way in which subordinates perceive a supervisor's behaviour can positively or negatively influence job satisfaction. Communication behaviour such as facial expression, eye contact, vocal expression, and body movement is crucial to the superior-subordinate relationship.

**8.18 Communication overload and communication underload:** According to the ideas of communication over-load and under-load, if an individual does not receive enough input on the job or is unsuccessful in processing these inputs, the individual is more likely to become dissatisfied, aggravated, and unhappy with their work which leads to a low level of job satisfaction

## IX. CHALLENGES FOR DERIVING JOB SATISFACTION IN IT SECTOR

1. Support of Boss- A boss can provide positive motivation or he can demotivate an employee depending on his/her personality and behaviour towards the individual. Bosses who are true leaders takes more responsibility for his/her subordinates mistakes and takes less credit for the success of the team.
2. Some of the leaders commonly we find in the organizations who donot work but blame his team for a failure and credit self when there is an award for team achievement.
3. Stress in the minds of Software Engineers.
4. Today in the IT Sector, the software engineers are overburdened with the jobs they have been assigned. They find no time for their relatives and friends, and for entertainment.
5. There is lot of competition in the IT field. There is an increasing demand for the high IQ engineers. Attrition levels are very high. This itself is a parameter which indicates us that the Job Satisfaction is low for those engineers who are looking for a change.
6. Retaining talent and skill is a herculean task for the HR Manager due to the attitude of leaving the organisation for betterment and for want of satisfaction by the IT Engineers. In the software field if we lose talent, it is very difficult to proceed further with task left by escaping software engineers and at the same time it is difficult to again fill that vacancy for the HR Managers. Today in the IT sector focus is on how to retain talent and how to reduce attrition rate.
7. Job satisfaction is an attitude and not behaviour.
8. Negative attitude of Bosses. Normally no boss likes his/her subordinate to be smarter than him/her. If it happens to someone then to work with this type of boss, it is very difficult and at some instances the boss may demotivate and be claiming the innovation or creative discovery of his/her own. One has to be careful not to be over enthusiastic and trying to overtake boss.

## X. JOB CHARACTERISTICS MODEL (JCM)

Hackman & Oldham proposed the JCM, which is widely used as a framework to study how particular job characteristics impact on job outcomes, including job satisfaction. The model states that there are five core job characteristics - skill variety, task identity, task significance, autonomy, and feedback.

The five core job characteristics can be combined to form a Motivational Potential Score(MPS) for a job, which can be used as an index of how likely a job is to affect an employee's attitudes and behaviors.

### Motivating Potential Score

The motivating potential score (MPS) can be calculated, using the core dimensions discussed above, as follows:

$$\text{MPS} = \frac{\text{Skill variety} + \text{Task identity}}{\text{X Autonomy} \times \text{Feedback}}$$

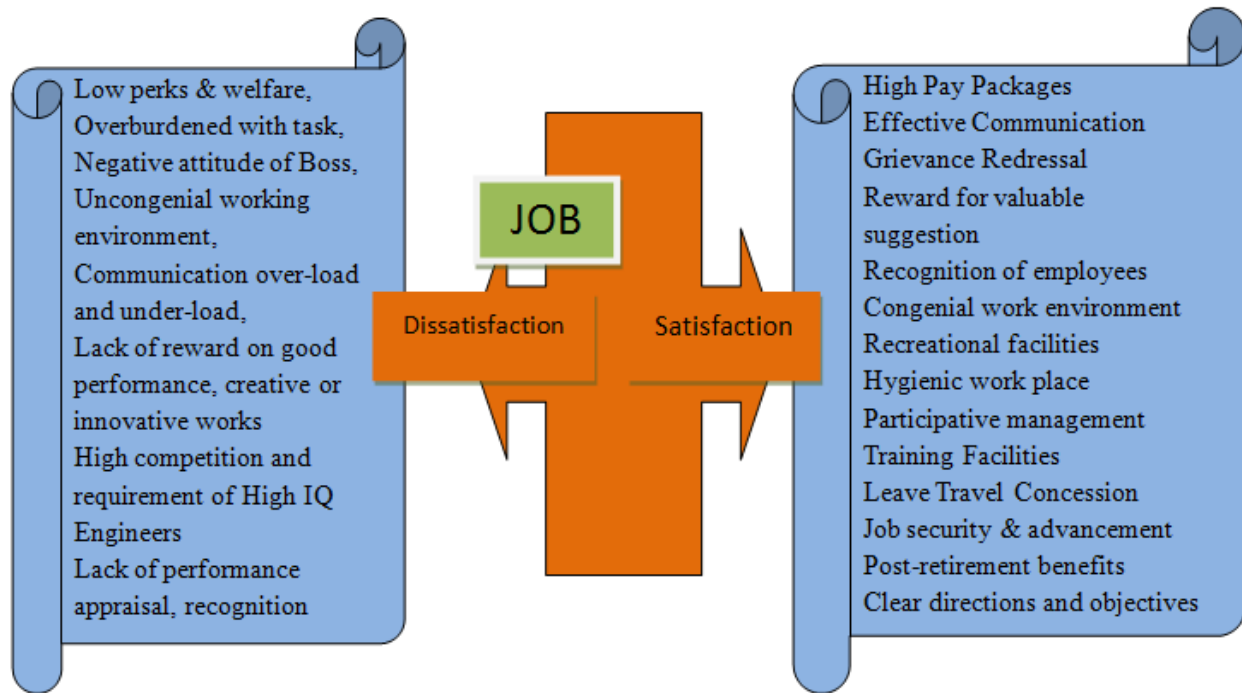


Fig. Model showing dissatisfying and satisfying factors

## XI. CONCLUSION

The software is a logical product, a product of complete mental exercise. The employees of software industry need mental peace and satisfaction to the job. Unless satisfied they cannot perform well. The job satisfaction can reduce cost, effort and time, and can improve productivity and total output. This can improve the success rate of software products. Emphasis has to be given on the factors that would reduce the level of discontent among the employees and would enhance the satisfaction level.

It is a pitiable plight with IT/ICT industry that not much is known about how the overall goals of the industry contribute to the degree of satisfaction or dissatisfaction. A study of the relationship between satisfaction and goal of the industry may prove 'Torch-Bearer' on a variety of issues that otherwise may not be possible. It would be pertinent to say that such a study may help industry to develop its plans to induce greater satisfaction or to improve employee's commitment to work. Then only IT/ICT industry can contribute to greater market share and return on investment, lower manufacturing costs; improve productivity and improve the area of strategic performance.

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