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Focus

Workers' Participation and Productivity

Harvinder Singh

Productivity has become the buzzword of our times. Everyone wants only one thing—more the productivity, the better it is. Improvement in technology is considered as the most effective intervention for increasing productivity. The change in technology brings in a host of things. The perception of management and that of the workers may differ. After all, this intervention is to be implemented through workers. Human factors need to be kept in view. In this article, relationship of workers participation and productivity has been explored. It provides insight which can be used to control the variable.

Harvinder Singh is Director, Ministry of HRD, Department of Higher Education.

Introduction and Background

Productivity can be increased by improving the efficiency with which the different inputs to production are used, for example, through better organization of labor, or better technology. To take a classic case, Adam Smith set out the example of specialization in a pin factory. This leap of productivity Smith attributed to organization and technology; the division of labor and to the ability to utilize time saving machinery by which one laborer can do the work of many (Lindsay, 2004).

Average productivity can improve as firms move toward the best available technology; plants and firms with poor productivity performance cease operation; and as new technologies become available. Firms can change organizational structures (for example, core functions and supplier relationships), management systems, and work arrangements to take the best advantage of new technologies and changing market opportunities. A nation's average productivity level can also be affected by the movement of resources from low productivity to high productivity industries and activities (Australian Government)

National productivity growth stems from a complex interaction of some of the most important immediate factors including technological change, organizational change, industry restructuring, and resource reallocation, as well as economies of scale and scope. Over time, other factors such as research and development and innovative efforts, the development of human capital through education, and incentives from stronger competition promote the search for productivity improvements and the ability to achieve them. Ultimately, many policy, institutional, and cultural factors determine a nation's success in improving productivity (Australian Government).

The concern that improvement in productivity would mean fewer workers is not correct. According to Australian

Government, Productivity Commission, at the firm or industry level, a productivity enhancing factor, such as the introduction of new technology, can mean that fewer workers are required to meet production needs. This is not always the case, however, as a firm with innovative products can stimulate such strong demand that it needs to put on more workers to raise production to meet the demand (Australian Government).

Efforts to improve productivity will need to focus on all the aspects of personal management and human capital dynamics. According to Campbell et al. (1988), their approaches have included matching individuals to jobs and tasks, training individuals in job skills and knowledge, changing the structure of groups, and motivating individuals and groups toward job objectives.

Interventions for enhancing productivity need to inform all the echelons otherwise there may be a drag and results would not be on expedited lines. According to Sink and Smith (1994) making an improvement intervention in one entity and projecting positive performance linkages to other entities at the same or different levels requires profound knowledge. Profound knowledge encompasses a theory of systems, variation, psychology, and knowledge itself. It equates to a sufficient understanding of the organizational system to identify and predict cause-and-effect relationships. When interventions are made without profound knowledge, they are not likely to have their intended effect, subsystem performance may be enhanced, but the performance of the larger system will not be because the linkages are not understood. The consequence is the productivity paradox-extensive investments in enhancing the productivity of individuals and groups that do not lead to expected improvements in larger organizations or in the enterprise.

Role of Workers' Participation

It is clear that one of the most important areas to focus is 'Worker'. Workers' participation may give stability to the productivity movement. It will remove at least the negative perception of the workers to movement for enhancing productivity.

The active involvement of all workers in the process of change is important for creating the right climate and working attitude for productivity. Participation not only contributes to the development of an organization but at the same time has a pronounced educational effect. Workers can be involved in many ways: through meetings, work groups, task forces, brainstorming, suggestions scheme, quality circles, informal discussion, formal and informal mechanism of labor-management relationships (Prokopenko, 1987).

According to ILO Workers' participation, it may broadly be taken to cover all terms of association of workers and their representatives with the decision-making process, ranging from exchange of information, consultations, decisions and negotiations, to more institutionalized forms such as the presence of workers' member on management or supervisory boards or even management by workers themselves as practiced in Yugoslavia (Workers' Participation in Management, 2008).

It is considered an instrument for increasing the efficiency of enterprises and establishing harmonious relationship. It is believed that by achieving industrial peace and harmony the objective of higher productivity and increase production can be achieve.

The active involvement of all workers in the process of change is important for creating the right climate and working attitude for productivity. Participation not only contributes to the development of an organization but at the same time has a pronounced educational effect. Workers can be involved in many ways—through meetings, work groups, task forces, brainstorming, suggestions scheme, quality circles, informal discussion, formal and informal mechanism of labor-management relationships (Prokopenko, 1970).

The Japanese productivity movement is characterized by two widely known forms of workers' participation—the staff idea scheme or suggestion-box approach, which enables workers to express ideas on improving either through own work or management practice, in quality control circles (Prokopenko, 1987).

The participation of workers can take place by one or all the methods listed below (Workers' Participation in Management, 2008):

- Board-level participation
- Ownership participation
- Complete control
- Staff or work councils
- Joint councils and committees
- Collective bargaining
- Job enlargement and enrichment
- Suggestion schemes
- Quality circles
- TQM

Accordingly, the workers were asked questions (Box 1) to judge the extent of their participation in decision making at unit level, job level. Questions were also asked to know as to whether they had occasions and freedom to use their initiative for creativity. These aspects have been studied as "workers participation."

Box 1: Questions to Judge Worker's Participation in Decision Making

1. How much influence do you have over the decisions in your work unit?
2. There is a great deal of challenge on my job; I get a chance to use my special skills and abilities and often have jobs, which require all my abilities to complete successfully.
3. I can take initiative and act on my own.
4. I am able to use my creativity to do something new
5. I have enough freedom in my role.

Methodology

Survey was conducted through questionnaire and personal interaction at select companies. Two companies were selected in textile industry (which is traditional industry) namely Jagjit Cotton Textile (JCT) with units at Phagwara and Hoshiarpur and Rana Polycots Limited (RPL). While JCT has moved from a traditional textile mill to modern textile mill, RPL has been established with the latest technology. The workers in these units will, therefore, reflect the scenario of technological absorption. Two companies have been selected from tractor Industry (which is modern industry) namely Hindustan Machine Tools (HMT), Pinjore, which has almost become sick unit, and is trying for turn around, and Punjab Tractors Limited (PTL) which is presently doing reasonably well under Mahindra and Mahindra. In all, 358 questionnaires were collected from the four selected companies.

An elaborate questionnaire was prepared which had four parts.

First part was designed to net the personal information. Second part had questions on a five-point scale. The third part gave ranking of reasons for leaving current job. The fourth part consisted of open-ended questions.

Twenty one variables were generated from the questionnaire on the basis of five-point scale: (i) Commitment; (ii) Technology absorption; (iii) Workers' participation; (iv) Interest of work; (v) Effectiveness; (vi) Satisfaction of promotion policy; (vii) Motivation for productivity; (viii) Job satisfaction; (ix) Interactions within workgroup; (x) Cultural cohesion; (xi) Job stress; (xii) Perception of job security; (xiii) Interactions with supervisors; (xiv) Interactions with peers; (xv) Interactions with spouse; (xvi) Interactions with friends; (xvii) Interactions with relatives; (xviii) Interactions with informal group; (xix) Role clarity; (xx) Role of trade unions; and (xxi) Productivity.

Statistical Tests

The following statistical tests were conducted based on the information received through questionnaire:

1. Chi-square test: For applying Chi-square test, the data was arranged in ascending order. The first 27 percent of the respondents were considered to be low scoring. The next 46 percent were considered to be moderate scoring, and remaining 27 percent as high scoring.
2. Regression (Enter): This test was performed on 21 human factors including perception of productivity.
3. Regression (Step-wise): This test was performed on 21 human factors including productivity. This test is used to eliminate some of the superfluous variables and also to avoid the problem of multi co-linearity.
4. Graphs: Graphs were also plotted to have a graphic view of relationship of productivity with all the 20 human factors and also social capital variable.

For studying the relationship with other human factors, Chi-square and Regression analysis were conducted.

Relationship of other human factors with "Workers' Participation"

For studying the relationship with other human factors, Chi-square, Correlation and Regression analysis were conducted.

Chi-square Test

Relationship of human factors "Workers' participation" with other human factors is significant at 1 percent in respect

of variables "Interest of work, effectiveness, promotion policy, motivation for productivity, job satisfaction, interactions within workgroup, cultural cohesion, job stress, interactions with supervisor, interactions with peers, interactions with spouse, interactions with friends, interactions with relatives, interactions with informal group, role clarity, role of trade unions, productivity, commitment and technology absorption." Relationship with variable "job security" is significant at 5 percent.

Table 1: Relationship of other human factors with "Workers' Participation" (Chi-square)

Human factors	Value	Df	Asymp. Sig. (two-sided)
Commitment	19.855	4	0.001**
Technology absorption	130.618	4	0.000**
Interest of work	154.783	8	0.000**
Effectiveness	147.208	4	0.000**
Promotion policy	30.536	4	0.000**
Motivation for productivity	99.154	4	0.000**
Job satisfaction	52.056	6	0.000**
Interactions within workgroup	34.797	4	0.000**
Cultural cohesion	34.348	4	0.000**
Job stress	40.973	4	0.000**
Job security	11.860	4	0.018*
Interactions with supervisor	108.356	4	0.000**
Interactions with peers	24.028	4	0.000**
Interactions with spouse	14.669	4	0.005**
Interactions with friends	119.739	6	0.000**
Interactions with relatives	48.602	4	0.000**
Interactions with informal group	125.270	8	0.000**
Role clarity	23.549	4	0.000**
Role of trade unions	34.062	8	0.000**
Productivity	137.261	4	0.000**

* Significant at 5 percent
** Significant at 1 percent

It has thus significant relationship with all the 20 variables.

Regression Analysis

Regression (Enter): Twenty independent variables explain 66.2 percent of the dependent variable "Workers' participation." The results are given in Table 2.

Table 2: Dependent Variable: Workers' participation

Model	R Square	R Square Change
1	.662	.662

Regression (Stepwise): When regression (stepwise) was performed only nine variables were found to be significant. The results are given in Table 3. These nine variables explain 65.3 percent of the dependent variables "'Workers' participation." The contribution of nine variables toward explaining the dependent variables is as follows:

Effectiveness	42.9 percent
Technology absorption	08.8 percent
Interactions with informal group	04.6 percent
Job satisfaction	02.6 percent
Interest of work	01.3 percent
Job stress	01.9 percent
Promotion policy	01.3 percent
Interactions with Supervisor	00.9 percent
Interactions with Peers	00.9 percent

Table 3: Dependent Variable: Workers' participation

Model	R Square	R Square Change
Effectiveness	0.429	0.429
Technology absorption	0.517	0.088
Interactions with Informal group	0.563	0.046
Job satisfaction	0.589	0.026
Interest of work	0.603	0.013
Job stress	0.622	0.019
Promotion policy	0.635	0.013
Interactions with supervisor	0.644	0.009
Interactions with peers	0.653	0.009

Contribution of the variable "Effectiveness" is highest at 42.9 percent in explaining the dependent variable "Workers' participation."

Remaining 11 human factors [that is, variables other than nine found significant in regression (stepwise) analysis] explain only 0.9 percent of the dependent variable.

For workers' participation, suggestions scheme, quality circle, Kaizen, etc., are used which increase the effectiveness of the workers. Workers make contribution toward upgradation of technology. It promotes interactions between peers, supervisor, and informal groups for showing better results. It enhances interest of work and job satisfaction. Workers' participation is linked with promotions as a reward. It also affects the job stress.

Monthly Labor Review (September 1984) by Diane Werneke, Sar A. Levitan echo following similar views: Job satisfaction may also play a major role in worker productivity. One of the principal arguments advanced in favor of worker participation is that giving employees a greater share in decision making can reduce alienation and, with it, nonproductive practices such as absenteeism, turnover, and poor-quality work. Workers are viewed as being less willing to accept authoritarian decisions just because they have stepped within the factory, office, or shop. (Levitan and Werneke, 1984).

The following responses received from the workers when survey was made highlight the importance of workers' participation:

Workers participation is very important in the growth of company. They sometimes feel they are cut off because they don't get all what is offered to management staff. *—(A respondent from PTL)*

Workers participation at job level will encourage the workers to enhance the productivity.
—(A respondent from JCT)

Helps in taking right decision by the management.
—(A respondent from JCT)

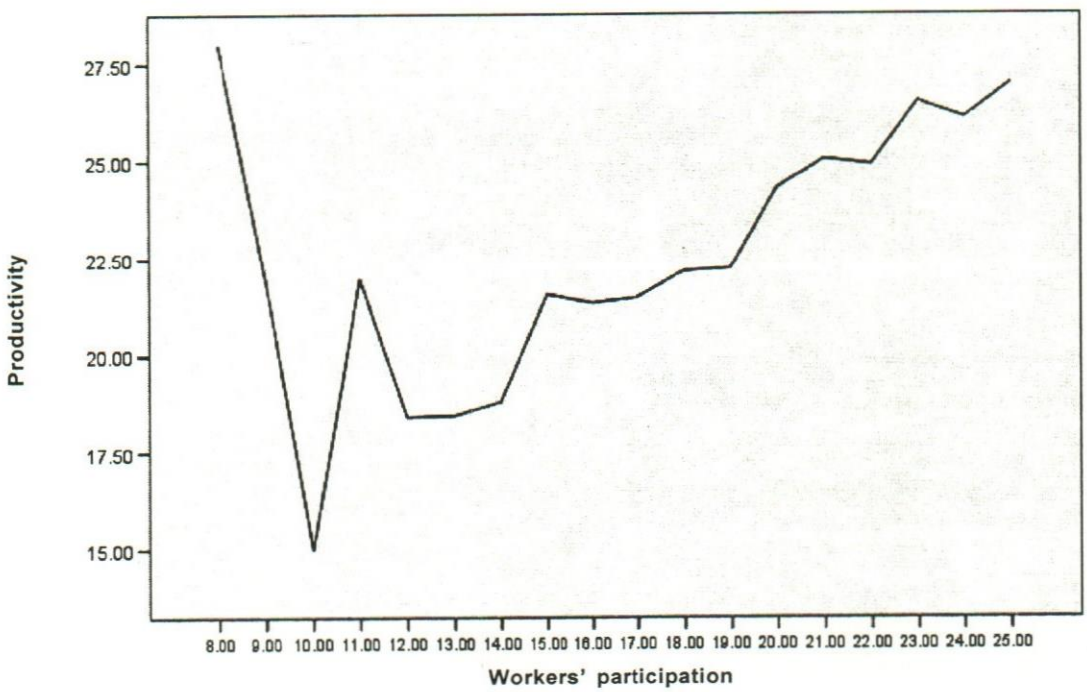
Best policy for good management.
—(A respondent from PTL)

Workers participation is an important aspect for organization productivity. Workers feel involved in company and they feel they are part of the organization. *—(A respondent from PTL)*

Graphic Representation of the Relationship between Workers' Participation and Productivity

The graph has been plotted between the score of variable "Workers' participation" and Mean Productivity (Figure 1).

Figure 1: Graphic Representation of the Relationship between Workers' Participation and Productivity



Between score 10–25 of the independent variable "Workers' participation," there is almost continuous increase in productivity. The above discussions prove our hypothesis that the Workers' participation has positive significant relationship with Productivity to the extent indicated above.

> The following responses from workers convey the belief of the workers that Workers' participation will increase the productivity:
>
> It is a must to achieve maximum productivity.
> *—(A respondent from HMT)*
>
> It works as a catalyst in increasing productivity.
> *—(A respondent from HMT)*

For promoting Workers' participation, the organizational structure and approach of the management has to be conducive so that the talented are encouraged. Huselid (1995) noted that the contribution of even a highly skilled and motivated workforce will be limited if jobs are structured, or programed, in such a way that employees, who presumably know their work better than anyone else, do not have the opportunity to use their skills and abilities to design new and better ways of performing their roles.

The graphic representation provides linear relationship between the two variables. The score of Productivity increasing the score of Workers' participation shows positive relationship between the two variables.

However, regression (stepwise) analysis did not show Productivity as a significant variable in explaining Workers' participation. It may be because of other intermediate variables. However, Chi-square analysis and Correlation analysis show significant relationship of Workers' participation with Productivity.

Productivity as Dependent Variable

Relationship of Workers' participation and Productivity can also be studied by taking productivity as dependent variable.

Regression Analysis

Regression (enter): Twenty independent variables explain 67.5 percent of the dependent variable. The results are given in Table 4.

Table 4: Dependent Variable: Productivity

Model	R Square	R Square Change
1	0.675	0.675

Regression (stepwise): Stepwise regression analysis was used to eliminate superfluous variables and also to avoid the problem of multi-colinearity. The results are given in following Table 5. Ten independent variables were found to be relevant. These 10 independent variables explain 66.3 percent of the dependent variable.

Table 5: Dependent Variable: Productivity

Model	R Square	R Square Change
Motivation for productivity	0.377	0.377
Interactions with spouse	0.502	0.125
Interactions within workgroup	0.560	0.058
Interactions with Informal group	0.614	0.054
Role clarity	0.633	0.018
Workers participation	0.641	0.009
Cultural cohesion	0.649	0.007
Technology absorption	0.653	0.005
Promotional policy	0.658	0.005
Effectiveness	0.663	0.005

Remaining 10 human factors [that is, variables other than 10 variables found to be significant in regression (stepwise) analysis] explaining only 1.2 percent of the dependent variable. Cultural cohesion has been found to be significant in regression (stepwise) analysis and Chi-square test.

Workers' participation explains 0.9 percent of Productivity. When it is co-related with the results given by regression analysis with Workers' participation as dependent variable, it would be seen that Productivity was not found to be significant. It is included in remaining 11 human factors which explain 0.9 percent of the dependent variable Workers' participation.

The overall analysis indicates significance of Workers' participation in Productivity. Graphical analysis establishes clear cut relationship between the two. With the increase

in Workers' participation, the mean Productivity showed steady increase. This result is corroborated by Diane Werneke, Sar A. Levitan (Levitan and Werneke, 1984).

When results of regression analysis (stepwise) in Workers' participation as dependent variable and Productivity as dependent variable are compared, four variables namely Effectiveness, Technology absorption, Interaction with informal group, and Promotion policy found significant in both the analysis. Workers' participation is also significant in analysis with Productivity as dependent variable. This supports the hypothesis that Workers' participation and Productivity are significant for each other and also support the graphical analysis which shows increase of Productivity with increase of Workers' participation.

The chief contribution of workers participation in West German productivity seems to be that it has promoted industrial peace and acceptance of change. Workers' councils have provided a mechanism for handling grievances and disputes and have helped to prevent management decisions that could cause employee dissatisfaction. With respect to shop-floor experiments, however, little hard evidence is available on contributions to productivity (Levitan and Werneke, 1984).

This study also supports relationship between Job satisfaction, Interest of work, Job stress, and Interaction with supervisor and interaction with peers in the Workers' participation. This supports the above view of Diane Werneke.

The Japanese system of industrial relations has nourished industrial harmony. Damaging strikes are rare. However, the most persuasive evidence of the positive relationship between productivity and employee participation comes from the quality control circles. With the establishment of these circles, responsibility for quality control shifted from engineers with limited shop-floor experience to employees working in teams with engineers. Numerous examples have been cited of employee suggestions that, when implemented, improved productivity (Levitan and Werneke, 1984).

Three interactions namely Interaction with informal group, Interaction with supervisor, and Interaction with peers which are very important part of the Social Capital are found significant for explaining Workers' participation. In productivity also, Interaction with informal group, Interaction within work group, and Interaction with spouse which are again import Social Capital variables are significant. It would, therefore, be said that Social Capital enhances both Workers' participation and Productivity. It also supports the Japanese system realities that tools like quality control circles are useful for increasing Workers' participation. During this study, even the workers interviewed were of the view that Workers' participation is a catalyst for increasing Productivity.

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The only difference between a mob and a trained army is organization.

— Calvin Coolidge

Focus

Designing an Effective Organizational Structure: Methodology and its Application

Sharad Goel and Gyanesh Kumar Sinha

Japanese managerial effectiveness has been attributed to high product quality and productivity. In Japanese manufacturing environment, product and process designers work in close collaboration. This close working relationship, called concurrent engineering, has the focus of many well-organized companies.

This article presents a methodology for designing effective organizational structures and illustrates its application to a manufacturing company. The company wants improved communication between design and manufacturing engineering. Although the firm employs the concurrent engineering concept with a cross-functional organizational structure, there has been little change in traditional attitudes, behavior patterns, and communication process. A changed organizational structure has therefore became necessity.

Sharad Goel is working as Head-Academics and Professor of Marketing at Army Institute of Management & Technology(AIMT), Greater Noida and Gyanesh Kumar Sinha is working as Assistant Professor at Army Institute of Management and Technology.

Introduction: New Manufacturing Methods

Historically, after the design department developed the product, manufacturing engineering would design the production process. If the production line encountered problems, manufacturing engineering was usually blamed for designing an appropriate process. Today, the relationship between design and manufacturing engineering is changing. Product development and process design take place concurrently. These concurrent activities help integrate product and process designs and improve product quality and manufacturability.

Business conditions have brought about a change in the relationship between design and manufacturing engineering. Today's customers are demanding shorter product design to manufacturing cycle times. This requires decreased manufacturing set-up and cycle times. Customers also demand better product quality, reliability, process-control, and cost effectiveness.

Concurrent engineering is a process in which multiple disciplines are committee to working together. Their task is to conceive, develop and implement product programs that meet customer need (Walklet, 1989). This evolves identifying and designing product concepts that are inherently easy to manufacture. Product designers traditionally concentrated on the functions of product while process designers emphasized efficiency. Effective management of concurrent engineering process is critical to its success. Examination of the organizational structures of companies employing it therefore becomes very important. This would naturally include functional and matrix management structures. Concurrent engineering facilitates reducing barrier that obstruct team work and communication by using interdisciplinary team

approach and hence decrease in product and product development costs and design to manufacturing cycle time (Peet, 1989). But there are numerous challenges for implementing concurrent Engineering Discipline. Education and time required to be devoted to knocking down barriers, rigorous training to improve team work, communication, and group decision making, talented and effective leadership.

Organizational Structure and Concurrent Engineering

There are two basic organization structures used by firm employing the concurrent engineering concept.

1. Cross-functional teams
2. Integration of product and process departments. Each of these structures along with their advantages and disadvantage will now be discussed.

Cross-functional Team

The cross-functional team has members from all the disciplines. Often this includes representative from marketing, purchasing, and test engineering. The teams work together but report to separate departments. These teams meet on a regular basis to discuss problems, share ideas, and review their performance.

The Ford Motor Company and the Cadillac division employ a cross function team process called the Vehicle Team Concept (VTC). They have six vehicle teams responsible for designing and manufacturing a new automobile. The team is composed of representatives from manufacturing, engineering, marketing, purchasing, and quality, who define the target market, establish goals, and manage the project schedules. They are responsible for the car's profit from the new model of the vehicle, making business decisions, and ensuring product reliability. The team's responsibility continues as long as the car is being produced.

Advantages:

- Product and process are designed concurrently.
- Less manufacturing problems and engineering changes.
- Reduction in design to manufacturing cycle time.
- Functional departments to maintain their own goals.

Cross-functional teams often undermine creativity. This is because product designers feel that the process designer has too much power and preempts the product design process. The design engineer becomes possessive of his design and it leads to conflict (Deans, 1989). Cross-functional teams require an efficient communication process and broad base of knowledge. Also, each participant needs to have excellent interpersonal skills.

Process–Product Department

A process–product department is a single department headed by a senior manager responsible for both the process and product. The manager's role is to:

- Provide information.
- Establish technical objective and goals.
- Measure performance.

Senior engineers are recognized as experts in their areas of specialty. This provides people with a reference for technical information. A single department has two distinct product designs and groups under one manager. Members from each group formulate a care team. The team meets regularly to integrate the process and product designs. These core teams successively work or similar project keep the knowledge base high and the learning curve low.

Advantages:

- Permits the manager to resolve any conflicts between them.
- The manager can better understand talent and capabilities of the subordinate product and process engineers.
- Easier to control.
- Improved communication.
- Allows the two groups to focus on specialization
- Better utilization of resources.
- Requires group to be more flexible and dynamic.

One study found that when manufacturing and design engineering worked somewhat independently, they caught only 30 percent of the problems. When integrated, they caught 65 percent of the problems (Soderbing, 1989).

Problems:

- Difficult to find leader who knows both product and process design process.
- In case of conflict, chances of biased decisions by manager/leader.
- Require strong technical and inter personal skills.
- Require significant changes in case of product and process departments' integration.

Organizational Structure Design

A manufacturing company is interested in organizational structure that will improve concurrent engineering process, that can be achieved by performing following steps:

- A set of factors that are important to successfully implement concurrent engineering should be identified.
- A list of alternatives needs to be prepared. Different alternatives should be evaluated.
- Selected the best alternative to enhance the present concurrent engineering process.

Implementation

The company should choose the organizational and management structure after careful study. The structure should promote increased communication and teamwork.

Factors for Success

There are three sets of factors that are important to the success of concurrent engineering.

1. Environmental factors
2. Process factors
3. Personnel factors.

Environmental Factors

The organization should provide an environment that supports its various design, support, and continuous process improvement teams. Making cost data available to the team, interchange of data between the teams, establishing a knowledge base or network of experts for providing any team, or individual specialized information are some of the most important forms of support which are desired.

Process Factors

The process should integrate the departments by using multidiscipline teams. Thus means that organization should promote teamwork through open communication, permit teams set their own goals (technical business and performance), encourage active participation from all team members, assist team in performing group decision making, and dedicate time to for individuals to function as a team. Once the team has completed its tasks, the members should be assigned to similar tasks so as to use their knowledge and continue their learning process. These process factors require strong leadership and management support.

Personal Factors

Each member of the team should be treated equally regardless of his departmental function. Every member should be educated about teamwork, group decision making, conflict resolution, and the concurrent engineering process. Spending time on the staff of other departments should enhance each member's learning experience. This will help team members gain new perspectives on each other's tasks. A leader dedicated to serving the team should manage the teams.

Alternative Organizational Structure

Industry has demonstrated many ways of structuring an organization that uses concurrent engineering concepts. The firm under consideration needs a structure that will fit the present organization and accommodate a new set of industry demands. Three different organizational structures will be considered.

Alternative-I

This first uses a traditional approach. Here, the operation and design engineering departments report to the Vice-President (Figure 1). The operations department is composed of several departments including manufacturing, engineering and accounting. The manufacturing department encompasses process design, process support, and some other functional groups. The design engineering department groups its design engineers into specialty product groups.

Alternative-II

This approach combines manufacturing and design engineering groups under a more immediate manager (Figure 2). This effort would ideally help bring the product design, process design, and process support groups closer

Figure 1: Organization Structure Alternative-I

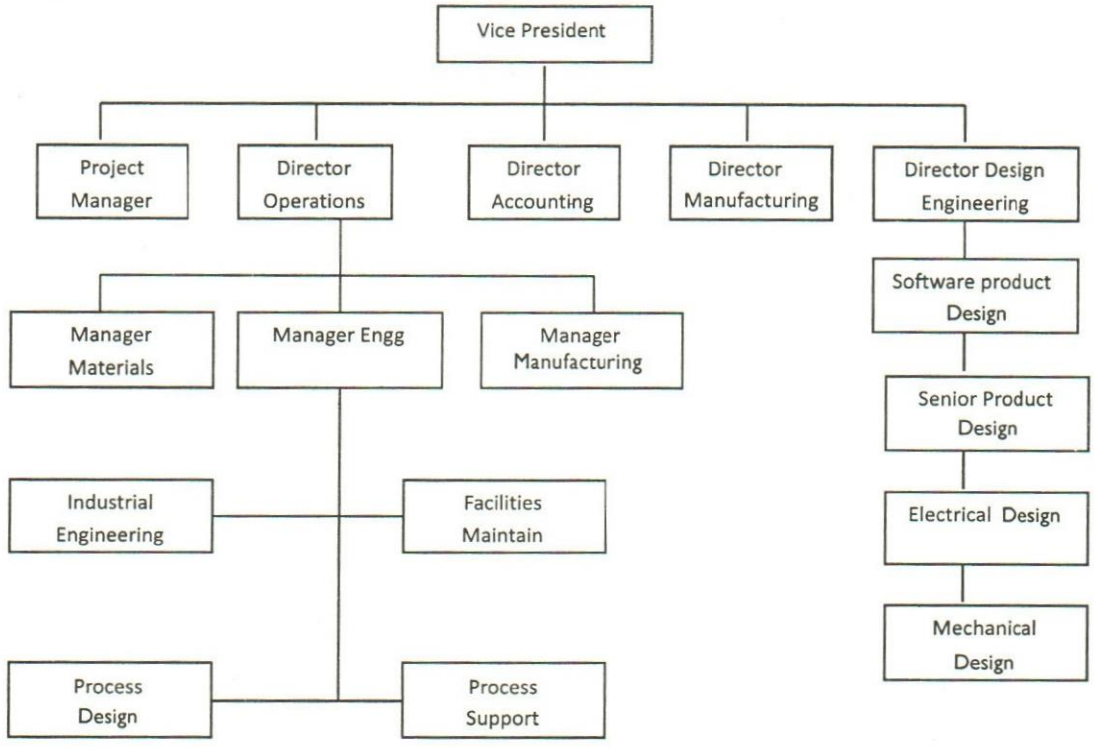


Figure 2: Organization Structure Using Alternative–II

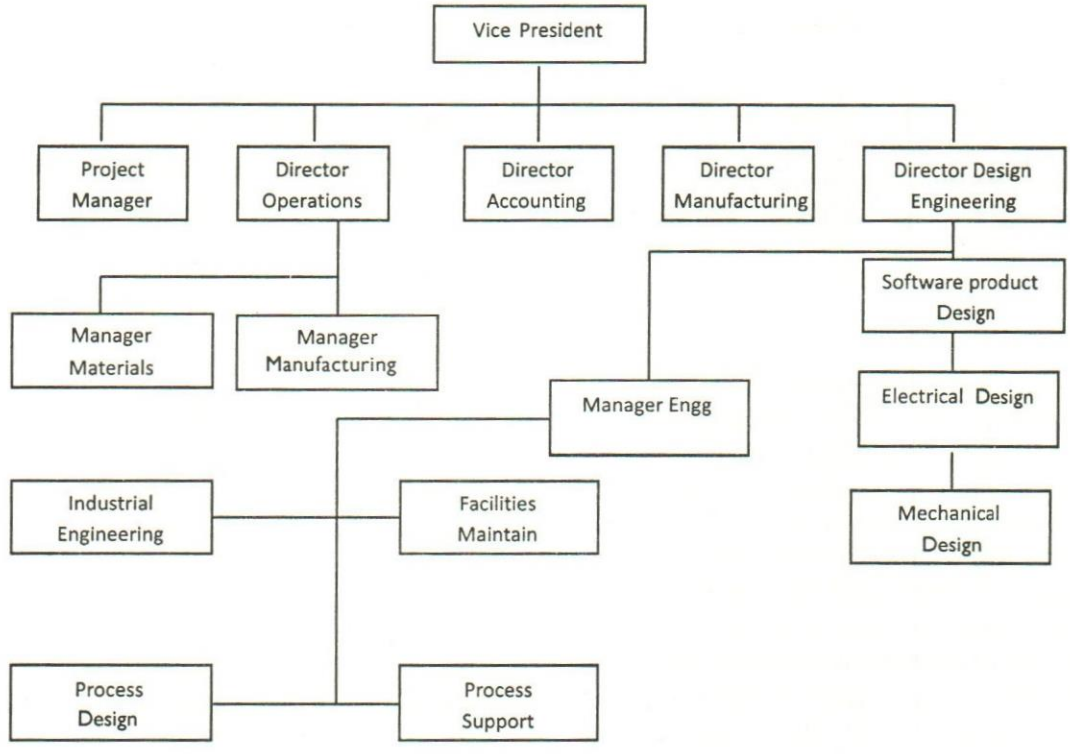
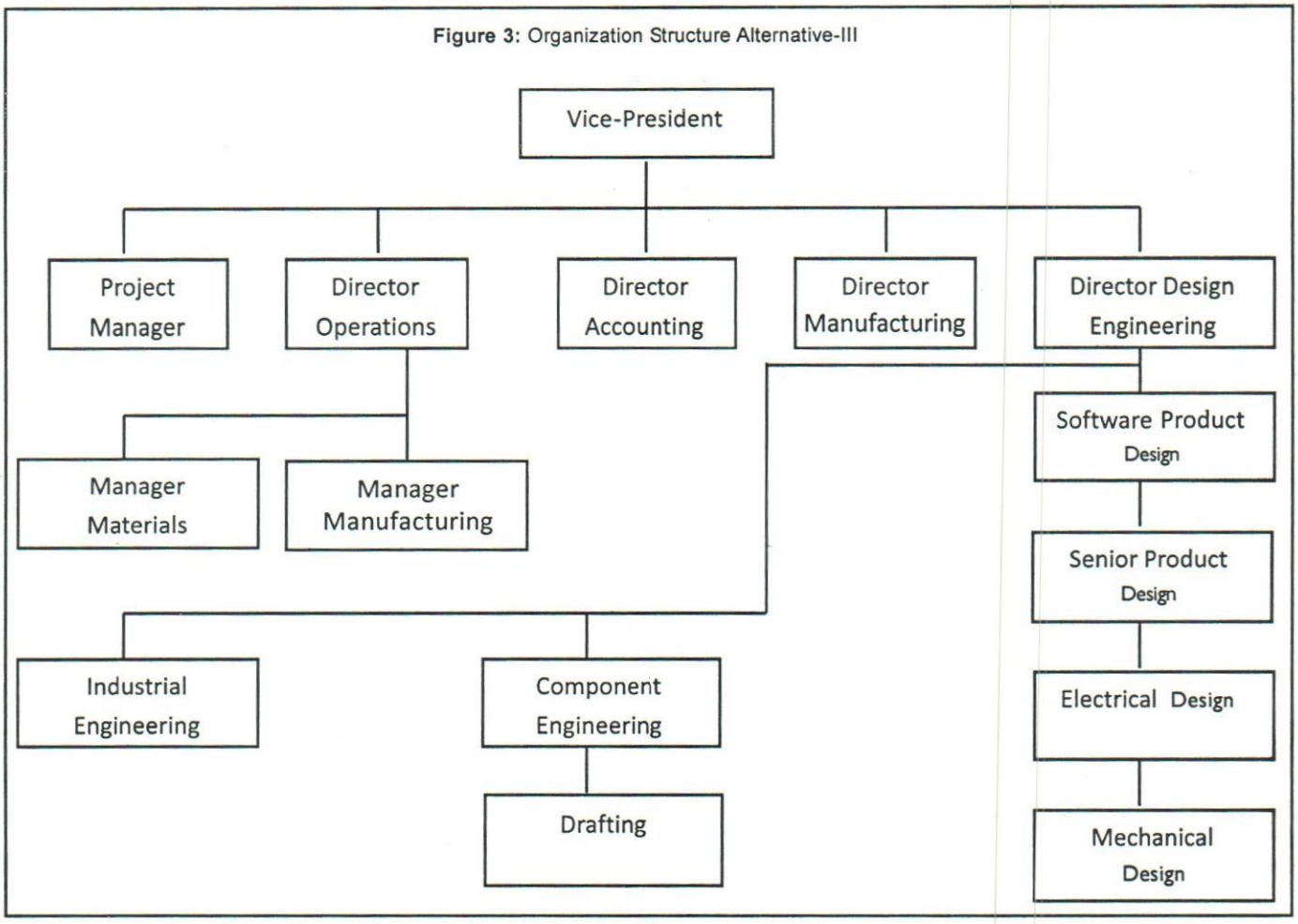


Figure 3: Organization Structure Alternative-III



together. Still, manufacturing engineering would operate with a functional structure. This structure allows product and process designers to share resources and resolve conflicts. Each functional area has its own managers and takes care of its own process.

Alternative-III

The last alternative involves integrating the manufacturing and design engineering departments further. Under this structure, each functional department would supervise product design, process design, process support and any other functional elements (Figure 3). The functional manager would be directly responsible for integrating this process and product design groups. Members from each group would work together and represent functional department. A program manager is a matrix managers of all these functional groups. Each functional group formulates a team of product designers, process designers, and process support personnel.

Evaluation of Alternatives—Methodology

It is difficult to evaluate qualitative problems. The Kepner Tregoe method of qualitative analysis is a useful approach to view such problems. This method involves identifying two sets of criteria, "musts" and "wants." These criteria are then quantified and scored to determine the most appropriate alternative.

About Kepner-Tregoe (technique)

Kepner-Tregoe's trademark technique, Rational Process, which is commonly referred to as the "KT Process," is the creation of structured, systematic processes which are used to maximize the critical thinking skills of key stakeholders in a particular situation, problem (potential or real), decision or opportunity. This is a rational model that is well respected in business management circles. An important aspect of Kepner-Tregoe decision making is the assessment and prioritizing of risk. So the idea is not

to find a perfect solution but rather the best possible choice, based on actually achieving the outcome with minimal negative consequences. It is marketed as a way to make unbiased decisions in that it is said to limit conscious and unconscious biases that draw attention away from the outcome. There are four basic steps when decision making Kepner Tregoe style:

- **Situation appraisal**–It is used to clarify the situation, outline concerns, and choose a direction.
- **Problem analysis**–Here the problem is defined and its root cause determined.
- **Decision analysis**–Alternatives are identified and a risk analysis done for each.
- **Potential problem analysis**–The best of the alternatives is further scrutinized against potential problems and negative consequences and actions are proposed to minimize the risk.

Box 1: Kepner-Tregoe approach to Project Managements.

Project Definition	Project Planning	Project Implementation
1. State the Project • What is the action and end result? • What evidence suggests a need for this project? • Are we capable of doing this? • How long would it take? • How much would it cost? **2. Devèlop Objectives** • What value should this project produce? • What benefits do we want? • What constraints do we face? • What requirements must be met? • How will we know when the objectives are met? **3. Develop Work Breakdown Structure** • What are the major outputs of this project? • What are the components of...? • How will we achieve the objectives? • How will we organize the work to ease planning and control? **4. Identify Resource Requirements** • What resources are needed? • How much of each resource is needed? • What will each resource cost?	**1. Assign Responsibility** • Who has resources for this work package? • Who has knowledge, skills and experience? • Whose commitment is needed? **2. Sequence Deliverables** • In what order must work be completed? • What knowledge or experience exists? • How much elapsed time will work packages take? • Schedule Deliverables • What assumptions are being made about constraints? • When should work packages start and finish in calendar time? **3. Schedule Resources** • Are resources available when needed? • Does the schedule need to be adjusted? **4. Protect the Plan** • Where are there significant risks or opportunities? • What could go worse or better than expected? • What is the likely hood of this potential even occurring? • What will be the impact/benefit? • What could cause this event? • How can we prevent/promote this likely cause? • What will we do if this happens? • How will we know it has occurred?	**1. Start to Implement** • Are the project statement, objectives, initial assignments, and performance expectations clearly understood? • What ground rules have been set for working together, communicating, and handling issues? **2. Monitor Project** • How do time, cost, and performance compare to the plan? • How does the customer view the project? • What conditions have changed? **3. Modify Project** • What concerns have surfaced? • What is the earliest point of impact? • What Definition and Planning steps need revision to address concerns? • How will changes be controlled and communicated **4. Closeout and Evaluate How will...** • Success against objectives and lessons learned be reviewed? • Closure be brought to the team? • The project summary be documented? • The project's ending be communicated?

Following the step-by-step approach of Kepner Tregoe decision making allows for the use of critical thinking skills in considering many possible factors that may be vital in making the decision.

Kepner-Tregoe Decision Analysis

- **Prepare decision statement** includes not only the desired result but also the action required
- **Define** Strategic requirements—"must haves"

  Operational objectives—"want to haves"

  Restraints—Limits in the system
- **Rank the objectives and assign relative weights**

Example

Objective	Weight
Want A	6
Want B	4
Want C	7
Want D	2

- **List alternatives**—Generate as many potential courses of action as possible whether immediately feasible or not
- **Score each alternative**

Step 1: Eliminate any alternative that does not fit the "must haves."

Step 2: Going through each alternative one by one, rate it against each Want on a scale of 1 to 10.

Step 3: Multiply the weight of the objective by the satisfaction score to come up with the weighted score.

Objective	Weight	Alternative 1 Satisfaction Score	Weight Score
Want A	6	4	24
Want B	4	6	24
Want C	7	6	42
Want C	2	7	14
Total weighted Score for Alternative 1			**104**

Step 4: Repeat this for each alternative.

- **Choose the top two or three alternatives and consider potential problems or negative effects of each**
- **Consider each alternative against all of the negative effects**: One at a time again, rate alternatives against adverse effects, scoring for probability, and significance.

Table 1 shows the evaluation of three alternatives using the Kepner-Tregoe framework. Ratings are based on the importance of criteria on a scale of 0–10. The grades assigned to each want objective are presented in Table 1. Grading of "wants" is scored on a scale of 0–10 for each alternative.

Alternative I has the matrix management structure shown in Figure 1. Such a structure depends upon the specialized processes. No cross functionality is encouraged. Such an organization leads to higher overhead costs and longer developmental cycles. This alternative has a score of 918 as shown in Table 1.

Figure 2 shows the organizational structure for alternative II. Here, manufacturing and design engineering have been integrated via a common director. The resulting structure has a functional orientation. Project teams are managed with a matrix management structure. The process design group members are assigned to the team based on their function. The Kepner- Tregoe results for this alternative are presented in Table 1. This alternative further integrates the product and process design groups. The resulting score of 979 suggests that improvements have been made.

The last organizational structure, alternative-III, is shown in Figure 3. This structure interweaves the product design, process design, and process support groups by grouping them under a common functional department. Yet, these functional department operate with a matrix team management structure. The structure will require dramatic organizational changes. Personnel will need to be educated on how to work as a team and resolve intra team conflict. Each team will need members who have leadership abilities. This is important if the team is to work efficiently. This alternative has a score of 1,171 (Table 1). All the alternatives meet the must criteria. The total scores, however indicate that alternative III meets the "wants" criteria best. Alternative II is marginally better than alternative I.

Table 1: Kepner-Tregoe Analysis of Organizational Structure Ratings, Weights, and Scores

Wants/Objective	Ratings	Alt-I		Alt-II		Alt-III	
		Wt	Score	Wt	Score	Wt	Score
Minimum managers investment	5	6	30	6	30	7	35
Minimum use of administrative	6	5	30	6	36	7	42
No. of function department crossed	6	4	24	7	42	9	54
Maximum ease of resource sharing	6	6	36	7	42	8	48
Maximum ease of sharing data between process and product design	10	6	60	7	70	9	90
Maximum ease of sharing data between process design and process support	9	8	72	8	72	9	81
Maximum ease of sharing data between design groups and CPI team	8	7	56	7	56	7	56
Maximum use of expert knowledge	8	8	64	7	56	8	64
Maximum open communication	10	6	60	7	70	9	90
Maximum use of common goals	8	6	48	6	48	8	64
Maximum ease of every body participating	7	6	42	7	49	8	56
Minimum group conflict	9	7	63	7	63	8	72
Maximum group consensus decision making	9	7	63	7	63	10	90
Maximum knowledge retention	7	8	56	8	56	8	56
Maximum ease of transferring personnel between departments	5	6	30	7	35	9	45
Maximum feeling of equality /reduce stereotype	7	6	42	7	49	10	70
Maximum use of team management with group accountability	9	8	72	8	72	8	56
TOTAL SCORES			918		979		1171

Conclusion

The objective of this article was to develop a methodology to design an organizational structure to improve the communication between design and manufacturing engineering. It is interview to applying to a leading manufacturing firm located in Gurgaon (Haryana).

Three different alternatives are examined and evaluated against set of key success factors and the best alternative is chosen.

The chosen alternative integrates each of the functional product and process design groups into a matrix organization. This structure should enhance team work, communication, and performance. Foremost this structure aims to help integrate product and process designs and improves product quality and manufacturability.

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Quality is the result of a carefully constructed cultural environment. It has to be the fabric of the organization, not part of the fabric.

— Philip Crosby

Focus

A Culture of Dissonance*—An Enquiry into the Current Practice of "Job Hopping"† in Indian Industry

Arunava Narayan Mukherjee

With the advent of liberalization there has been a cultural metamorphosis in Indian society. Consumerism and materialistic gain are emerging as the guiding forces in shaping Indian psyche. This changed "cultural context" has a major impact on the Indian working community in their attitude to work and organization. Gone are the days of traditional loyalty to organization and allegiance to institution building; job-hopping is the current convention or fashion of corporate employment, especially for "Generation-X" it is an endless quest of changing jobs. Serving an organisation till retirement is an outdated practice.

In a developing nation like India which has strong cultural roots and traditional heritage this phenomena in long run can neither lead to the growth of the individual nor to the development of the organization. It indicates an unhealthy trend which speaks for non-integration of the individual with the organization, a work environment which can not yield quality performance with a long-term perspective. Even in this absolutely ruthless, highly competitive environment, the eternal philosophy of life and work remains unchanged, that is there cannot be shortcuts to success or to make money. The thing that fundamentally counts is loyalty and hardwork of the worker.

This article will discuss the changed sociocultural context of work in Indian perspective, what are the major motives that drive the Indian working community today, factors responsible for generating such motives, how different are they from India's own sociocultural fabric of motivation, and the impact of the said driving forces on individual and work organization.

Arunava Narayan Mukherjee is Adjunct Faculty of Human Resource Management International School of Business & Media, Kolkata

Introduction

> The old order changeth, yielding place to new,
> And God fulfils himself in many ways,
> Lest one good custom should corrupt the world
>
> **"The Passing of Arthur"**
> **Alfred Tennyson,**

Change is the only permanent eternal phenomena. Nothing lasts forever. The rule of life is applicable in case of jobs now-a-days. Jobs today do not last unlike earlier generations. Even a three-year stretch in the same organization is considered to be a stable job. Three jobs in less than a year, no longer raise eyebrows. Job hopping, in fact, has become the new mantra for success. Welcome to the new era of corporate culture which promotes the practice of change and dissonance.

A recent survey revealed that 24 percent of the graduates from premier B-schools like IIMs, XLRI, and Narsee Monjee change their first jobs within 12 months of their joining. Sticking to the same organization from which one starts one's career is outdated now. It is believed that those who continue with the same job are taken for granted and considered unworthy to move ahead in their career exceptions being those who are working in PSU and government-aided organizations.

Research methods

The author of the present article had series of prolonged discussion with employees, management personnel of various industries on the issue in question. Much of this article draws heavily on these experiences and available literature by previous works of scholars in this field. Efforts were made to get a realistic view of the situation.

*In music, a dissonance is considered unstable (or temporary, transitional) as opposed to a consonance (Latin *consonare*, "sounding together") is a harmony, chord, or interval considered stable.

†"Job Hopping" is the practice of changing jobs frequently, especially as a means of quick financial gain or career advancement.

The Societal Context of Emergence of Job-hopping

In India today the bulk of the workforce comprises of "Generation X." They belong to the age group of 21–35 and one can identify them with their characteristic "always-on-the-go" attitude and practice of "now nowism." Instant enjoyment is the order of the day. Security as a social concept gets its due only when it comes to the promotion of insurance product. In this context job security holds next to no importance in their priority list. The word loyalty has become old fashioned and is no more considered a success mantra. Loyalty, which once has been considered a fundamental value in an Indian organization seems to have lost its relevance.

Experts feel, India and Indians are moving from a "high context culture" toward a "low context culture." The concept of "context" was coined by Edward T. Hall, an anthropologist and author of *The Silent Language* (1959) and *The Hidden Dimension* (1966) in his pioneering work on intercultural communication. Hall looks at context as being either "high" or "low." He looked at "high context" cultures as those where meanings are derived and communication made, not just by the "utterances" but also by the "deeper meaning" which cannot be derived from the "utterances" alone. In a high context culture, it is important to have a contextual knowledge of that culture to understand the true meaning. On the other hand, in a low context culture, no contextual knowledge is needed.

Hall also saw differences arising in the way time and space are managed as a result of contesting. Traditionally, the western cultures would be considered a lot more low context and India more high context. Our ability as Indians to handle abstractions, do things simultaneously and focus on relationships, and not regard time and structure was seen as characteristic of our cultural context. Similarly, our inability to follow structure and manage time, follow processes, do repetitive tasks well, pay attention to details were all attributed to our high contextual orientation. A lot of this is clearly beginning to change. We are quite adept with structure, capable of slicing and managing time, following process, focusing on the task and not really get caught up with relationships (best explains the 30 percent to 40 percent attrition).

Tolerance level of the present generation is going down. This may be due to most of them belonging to nuclear families where all their needs were fulfilled as opposed to the joint family where compromise was synonymous with existence. If they have a rift with a colleague or boss, today's professional would rather move on than stay back and work out a compromise.

Enquiry into the Cause

Opening up of Indian economy

One of the most important reasons behind this behavioral pattern is the opening up of economy. The grasshopper thrives in summer. The job-hopper is likewise happiest when the economy is bustling. With India slowly becoming a part of the global corporate system there are many more job opportunities today than a few years back. The advent of MNCs, space for entrepreneurial skills, innovative ideas, and new technologies have created innumerable options. Even a few years back there were limited options for professionals in terms of job offerings. Today, there are no such boundaries.

Money Mantra

According to the 8th Annual Asia–Pacific Salary Increase Survey, a study conducted by global HR firm Hewitt Associates, external inequity of pay is the top reason for employees leaving jobs. In the new employee-driven economy, organizations have become dealers in talent, adopting aggressive pay positioning, and increased benefits. Hewitt's study indicates that variable pay continues to be an important means of attracting and retaining talent, with 91.8 percent of responding organisations using this practice. Within variable pay choices, individual performance awards continue to be the most popular, with nearly 68 percent of organizations saying that this is their preferred type of variable pay plan, followed by special recognition awards and business incentives. The study covering 1,800 organizations across 14 markets in the Asia–Pacific region says in 2007, Sri Lanka reported the highest average salary increase at 15.3 percent. India, ousted to second position, reported an increase of 14.8 percent

Lifestyle and Cost of Living

The cost of living is rising; one has to maintain a certain lifestyle. For today's Indian society, especially younger section of it, lifestyle full of materialistic pleasure matters a lot. The way to achieve it is through getting job which is highly paying, no matter how many changes does it require.

Changed Mindset of Corporate

The whole mindset of doing business has changed over the years. The ability to deliver, rather than loyalty to the

organization, is the key driver. If one is not performing as per expectations, the employer does not think twice before sacking that employee. The same is true for employees; as soon a better opportunity comes across, she hops. Profit maximization is the motive of the present organizations and they are ready to fire employees who are not delivering. Same with the employees, personal growth is their prime concern. Organizations have assumed that faithfulness is extinct in today's age.

Changing Pattern of Work Life

The new age has paved way for a very different work schedules. Gone are the days of 10–5 jobs. Today a person spends most of her day in the office and if he/she is not enjoying her work, it is not possible to carry on. Monotony can creep in and one loses interest in the job. The next obvious move is to find and opt for something more interesting.

Style of Supervision

Experience shows that most job hoppers have suffered injustice at the hands of the previous bosses at some point of time. People change not because the employer is not acceptable to them. They change because the bosses are not acceptable to them. Since one cannot choose a boss, it ends up in them choosing a different job.

Poor Human Resource Policy

Poor human resource policy of the corporate houses is to a great extent responsible for the emergence of this trend. Improper handling of the employees—corporate relation, lack of vision and mission for employee growth and development, ineffective reward system are various HR factors which lead to job-hopping.

Current State of Affairs

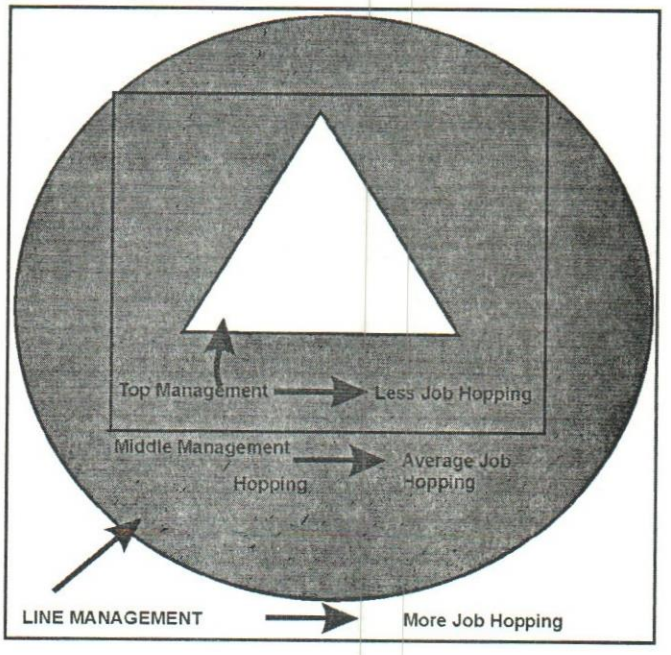
A survey on attrition by industry body Associated Chambers of Commerce and Industry of India (Assocham) revealed in December 2007 that the attrition rate had reached a national average of 40 percent—up from 32 percent in 2006. This may raise one's eyebrows, but what comes next will open his eyes—the bulk of attrition had shifted from the knowledge-based industry and services sector in the first half of 2007 to SMEs in the latter half.

According to a survey by consulting firm Hewitt Associates there are high attrition rates in Asia. The highest turnover was reported in India, where the average rate was 15.4 percent, a reflection of the rampant job-hopping in the Indian corporate world.

Now, what is the decent time interval for an employee itching to move on, preferably 3 years according to experts? In the first year, executives learn; in the second, they put programs in place. In the third year, they make the necessary improvements.

There are three kinds of job hoppers. The first kind change in the same field and for the sake of money. The second kind is ambitious, dynamic, proactive, and change agents. These people see challenges and do not accept slow, steady, and safe jobs and try to climb to leadership positions as early as possible. The third kind is the people who change functions and industries and are high risk takers. The third kind makes world-class leadership material and good entrepreneurs. Unfortunately, such people get labeled as "jacks of all trades."

Figure 1: Job-hopping according to corporate hierarchy



Source: http://www.indianmba.com/Faculty_Column/FC456/fc456.html

Experts believe the Business Process Outsourcing (BPO), Information Technology Outsourcing (ITO), and Knowledge Process Outsourcing (KPO) industries have been the major drivers to the trend of job hopping within a short span of time.

Assessment of the Practice

Arguments for Job-hopping

The employee perspective: Job change gives a broader perspective to individuals and exposes them to the functioning of different departments and varied cultures (Table 1).

Table 1: Age-wise/Sex-wise Job-hopping

S. No.	Age	Job-hopping	
		Males	Females
1	20– 25	Average	Minimum
2	25–30	Maximum	Minimum
3	30–35	Peak	Maximum
4	40–45	Medium	Average
5	50–55	Minimum	Minimum
6	55–60	No	No

Source: http://www.indianmba.com/Faculty_Column/FC456/fc456.html

Too much experience in a single field can be counter-productive. One can develop a unidimensional view of the job along with inflexible approach. There should be some variety in a résumé to indicate that a person is not resistant to change and ready to accept new challenges. For instance, someone with 3 years of marketing experience and 4 years of technical experience makes a better managerial candidate than someone with 7 years in one field.

If one realizes for the sake of the job his/her value is being undermined or one needs to ethically compromise he/she must consider a change.

If the job is causing serious mental and psychological strain one should start thinking about alternatives.

In the fast-changing business scenario if somebody's line of work is getting obsolete, one must acquire the new skills required for the latest jobs and careers and get himself ready for a change.

If a person has hopped many times in a year, it is probably because he has not found his career or he has been making bad judgments. In any case, it is better than being stuck in a career that the person dislikes. In fact, this practice makes a worker more in control of his life; he is facing his problems and thinking about it and not ignoring the impact of it on his actions. The worker knows he wants something more, or he knows he can do better; therefore he is looking for a new direction rather trying to reinvent his career.

Job hoppers, it is now contended, lead to the spread of knowledge and, as a result, innovation. This is obvious when it comes to hi-tech industries. But even the foreman on the shop floor could bring along with him time and cost saving practices when he switches companies.

Ronald Gilson of the Stanford Law School compares the success of California's Silicon Valley with Route 128 outside Boston (Massachusetts). Both started on an equal footing. But Massachusetts has a non-compete law (which prevents senior employees from leaving one concern and joining another in an allied line of business) while California does not. Inter-firm employee mobility (job hopping to the layman), says Gilson, is critical "in facilitating second-stage agglomeration economies: those that allow the district to transcend its original product cycle and reinvent itself." In other words, job-hopping catalyses the spread of knowledge in the economy and encourages the growth of new firms in similar businesses.

The Employer/Corporate Perspective: It becomes easier for the corporate to meet the customer demands with the new employees who join them by way of job-hopping.

As a result of this practice corporate get more experienced, trained manpower whose efficiency helps the corporate to save time and resources.

The practice of job-hopping helps in establishing "skill domination" and curbs the supremacy of the traditional "chair power."

If the employer finds from the resume of a candidate that he has moved from a smaller company to a bigger, more reputed one, the employer would give the candidate the benefit of doubt. Also, if he has moved a step up the hierarchy while shifting to a new company, that too, would count in his favor.

Arguments against Job-hopping

The employee perspective: From the point of view of the job seeker, switching companies poses problems for following reasons.

A series of rapid, random, and pointless moves will show up as annoyances on the resume. Employers view such contenders as dysfunctional—lacking in loyalty, trust, and self-motivation. Quick moves from one job to other raise big questions for prospective employers as to one's staying power and ability to withstand challenges, as well as accept accountability. Employer may feel that the

candidate is not committed to a particular organization. The future employers, who are probably looking for a long-term employee, might not be impressed with the job-hopping tendencies. They might perceive that the applicant has become a job-hopper may be because of inability to get along with colleagues or employers.

One has to prove himself/herself in a new company, one has to prove one's worth once again. All the hard work done at the previous company may help an employee to grab a new job. But at the new place, he has to start from scratch.

Once again one has to set up new relationships. The process or the way of doing things may vary widely from company to company. It is not unusual for a candidate to feel a bit disoriented at the new environment, and it often takes time to acclimatize.

Every time one person changes his jobs, he is giving up a substantial part of the "social capital" he has accumulated in that role. The term "social capital" refers to the web of relationships, reciprocities and, importantly, the trust that is painfully acquired over myriads of interactions and must be painstakingly rebuilt when roles change. This is the toughest part of the learning curve for most managerial jobs and one needs to factor this transaction cost into his/her decision to change. This is one more reason "imported" CEOs and COOs have a much tougher challenge than those groomed for at least a few years within an organization.

Grass is not always green on the other side; nothing can guarantee job satisfaction in the new job.

The experts believe that sticking to the same company for more time, rather than aimlessly hopping jobs, can provide better learning and career momentum to young professionals. Findings of a latest study by research and analytic firm Evalueserve reveal that, the multiple career steps within the same company accelerate a professional's growth more than many horizontal moves across companies.

Very rarely, large offers were offered in the past, unlike today. Moreover, tempting offers are being offered only by modern service industries. Old economy companies rarely make such offers. Majority of job hoppers lose sight of this. Large and established companies in any field always pay par salaries. They are more worried about maintaining internal equity. It is the new entrants who offer high salaries to attract people. However, they might not have the staying power.

The employer/corporate perspective: Job-hopping is a brain drain in the corporate. Job-hopping clinches the corporate in retaining of new talents. It is proving too expensive for the survival of corporates in today's era of mass consumerisation and globalization of the human efficiency.

Due to cost constraints, small and medium enterprises usually have to hire young professionals with little or no work experience and train them on the job. But young professionals are also more prone to job-hopping. Once they pick up the job and gain adequate experience the immediately shift to big companies.

Viability of the Practice in Indian Context

According to a research by the Organization for Economic Co-operation and Development, while Greeks workers tend to stay put for 13 years, French employees for 12, and Germans for a decade, workers in Britain and Ireland have a devil-may-care approach to job mobility. Yet neither is as mobile as Americans, who move jobs on average every four years. Therefore this phenomenon varies from country to country. Let us try to understand whether this practice is viable in Indian context. For that matter we need to understand the mindset of Indian workforce and the management of Indian organization.

In the contemporary context, the Indian management mindscape continues to be influenced by the residual traces of ancient wisdom as it faces the complexities of global realities. At the same time in the era of globalization where priorities of consumerism, technological education, mass media, and foreign investment predominate, newer tensions are becoming evident. For instance, contemporary Indian multinational companies and global firms in India have started shifting their emphasis to human resources with their knowledge and experience as the central area of attention in extending new performance boundaries (Khandekar and Sharma 2005). Considerable research evidence attests to this trend with particular relevance to greenfield organizations with little or no historical baggage in their organizational culture (Roy, 2006 and Sett, 2004).

Within Indian traditions the choice of individualistic or collectivistic behavior depends on a number of culturally defined variables. The dynamics of these variables are underpinned through three key elements guiding Indian managerial mindscapes. These three constructs are Desh (the location), Kaal (the timing), and Patra (the specific personalities involved). Sinha and Kunnungo (1997) claim that the interaction of these three variables determines the guidelines for decisional cues. Following Chatterjee (2007)

this managing or nurturing of the outer layer of collectivism in an inner private sphere of individualism is expressed in Table 2 mentioned below which demonstrates the behavioral anchors in Indian organizational life.

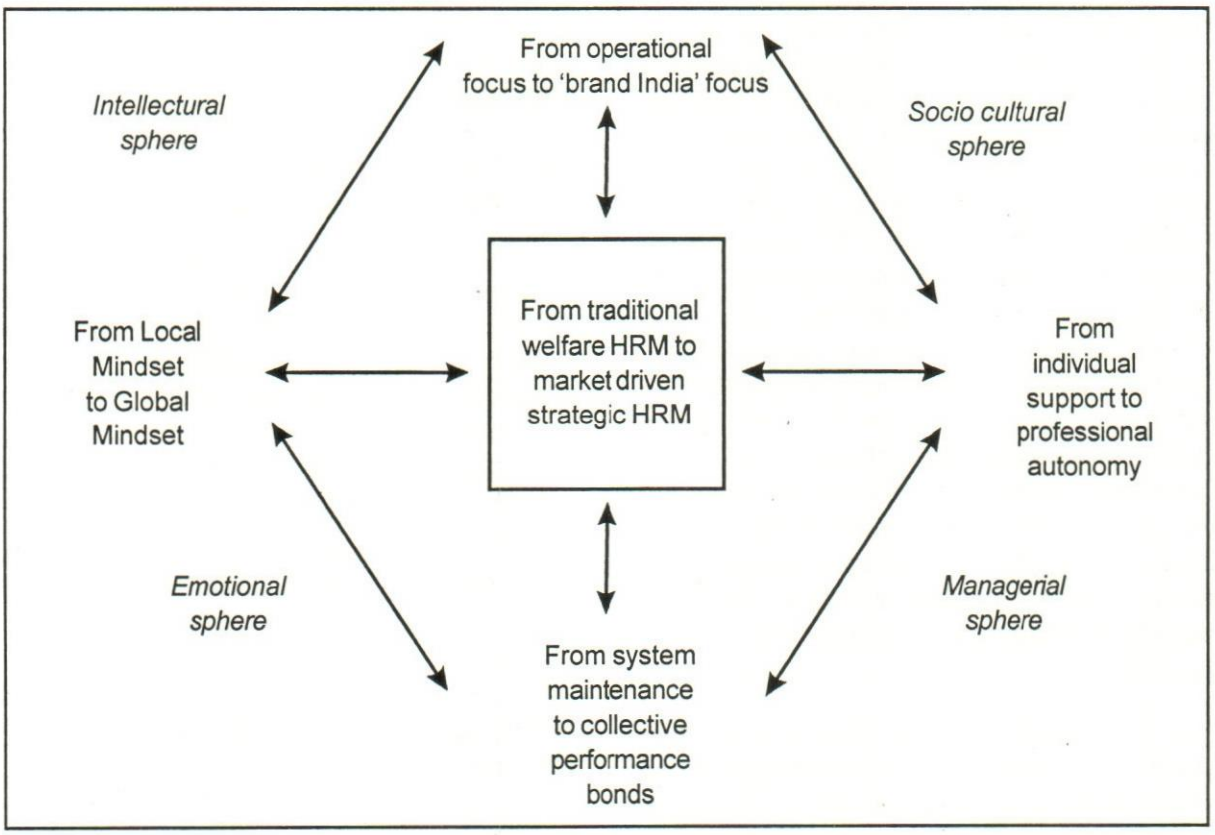
Table 2: Behavioral Anchors in Indian Organizational Life

DECISIONAL CUES	Desh (Place)	Kaal (Timing)	Patra (Actors)
SPIRITUAL ORIENTATION	Sattavaguna (Virtue focus)	Tamasguna (Negative focus)	Rajasguna (Action focus)
INTERPERSONAL RELATIONS	Sradha (Upward respect/ Loyalty)	Sneha (Downward affection)	Bandhan (Bonding)

Table 2 presents another powerful insight of the Indian tradition of the notion of "Guna" dynamics. According to Sharma (1996), this culture-based framework, which has three types of *gunas* (attraction), is being increasingly used in employee assessment and organizational team-building strategies. The contention is that each *guna* is a separate contribution to the core of human personalities. The Sattava (or truth orientation) is the sentiment of exalted values in people, organizations or society. Alternatively, the Tamasik guna depicts a negative orientation which can be expressed behaviorally as ignorance, greed, or corruption. Those individuals with a Rajasik *guna* are inherently driven by a desire to make a worthwhile contribution to their surroundings. Collectively, these spiritual orientations, which manifest as Sattava, Tamas or Rajas *gunas*, articulate as positive or negative HRM functions such as leadership, motivation or other institutional behavioural activity. The third row of Table 2 highlights the linking of HRM trends to sociocultural roots. The culture of Sradha (upward loyalty) and Sneha (mentoring with affection) outline the behavioral anchors derived from the civilization roots. The acceptance of "Sradha" by youngsters and the display of "Sneha" by the seniors have been the root of sustainability of all types of Indian organizations. This has a striking similarity to the concepts of "oyabun" and "kobun" in the Japanese cultural context.

There has been a marked shift towards valuing human resources (HR) in Indian organizations as they become

Figure 2: Drivers of Contemporary Indian HRM Trends



Source: (Chatterjee, 2007)

increasingly strategy driven as opposed to the culture of the status quo. In spite of this trend of convergence, a deep sense of locality exists creating more robust "cross vergence" in the conceptual as well as practical domain.

Figure 1 presents the key drivers for contemporary Indian HRM trends. In the figure there are four external spheres of intervention for HRM professionals and these spheres are integrated in a complex array within organizational settings. The intellectual sphere, which emphasises the mindset transaction in work organizations, has been significantly impacted by the forces of globalisation. Indeed, Chatterjee and Pearson (2000) argued, with supporting empirical evidence from 421 senior level Indian managers, that many of the traditional Indian values (respect for seniority, status, and group affiliation) have been complemented by newer areas of attention that are more usually linked to globalisation, such as work quality, customer service, and innovation. The most important work related attribute of the study was the opportunity to learn new things at work. Such cross verging trends need to be understood more widely as practitioners face a new reality of human resource development of post-industrial economic organizations.

The other three spheres of the figure, namely the emotional, the sociocultural, and the managerial domains are undergoing similar profound changes. For instance, the sociocultural sphere confronts the dialects of the national macro-level reform agenda as well as the challenge of innovating by addressing the hygiene and motivational features of the workplace. Consequently, this sphere, which is underpinned by the anchors of Sradha and Sneha, has the opportunity to leverage work setting creativity in dimensions of autonomy, empowerment, multiskilling and various types of job design. And the emotional sphere, which focuses on creativity and innovation to encapsulate the notions of workplace commitment and collaboration as well as favorable teamwork, brings desirable behavioural elements of transparency and integrity into organizational procedures and practices. The managerial sphere provides the mechanisms for shifting mindsets, for Indian organizations (Chatterjee, 2007).

From this analysis it is evident that unless Indian organizations undertake major strategic initiatives directed toward retention of human resource, job-hopping shall continue to dominate the Indian corporate scenario.

Rolling Stones to Solid Rocks: Combating Strategy

To avoid the detrimental effects of job-hopping, a business organization should inculcate formidable HRM practice. In this connection Indian experience can be discussed in the following manner:

Strategy Adopted by Big Corporate Houses

There has been a dramatic shift in the expectations of employees in the organized and globally linked sectors of the economy. An unprecedented rise in the disposable income coupled with a declining dependency ratio has led to young professionals becoming extremely mobile. The problem is critically evident in the off-shoring industry where the average retention period of an employee is considered to be around six to eight months. And the retention of senior level executives is an additional challenge. The attrition rates are highest in information technology (IT) (30–35 percent), business process outsourcing (BPO) (35–40 percent), insurance (35–40 percent), retail and fast moving consumer goods (FMCG) (20–30 percent), and manufacturing and engineering (10–15 percent) (Chatterjee, 2007).

Over the past decade, there has been a sea change in the area of Indian technical services and the associated HRM practices of recruitment and retention. One of the most concerning issues for HR managers in India is the high staff turnover. In industries like call centres, staff attrition is the single biggest issue. The industry has grown from zero employment to an employer of quarter of a million young English speaking, well educated, and ambitious people. The point is well made by Slater (2004: 34), who wrote:

> Attrition is highest in traditional customer service jobs, where young people find themselves having to spend all night on the phone, often with irate callers. In other areas such as claims processing or accounting, the turnover rate is much lower. More worrying for many companies is the 'merry go round' in supervising and management jobs, as new centers are only too willing to pay higher salaries to hijack experienced staff.

The issue of retention is much more critical in the high value-adding BPO sector such as R&D activities. This $40 billion industry has one of the highest attrition rates of around 20–25 percent. The service-laden BPO and Hord industry have the highest attrition rates. Many companies are developing innovative incentive packages in countering this job-hopping phenomenon.

Following Table 3 illustrates some of these initiatives by leading companies in India.

Table 3: Retention Strategies for Young Professionals

Name of the Company	Retention Strategy	Impact
Tata Consulting Services (TCS)	• A choice of working in over 170 offices across 40 countries in a variety of areas. • Paternity leave for adoption of a girl child • Discounts on group parties	• Significant impact on job-hopping achieved
ICICI Bank	• Identification of potential talented staff • Alternative stock options • Quicker promotion	• Discounts on group parties • Have been able to achieve higher retention rate
WIPRO	• "Wings Within" program where existing employees get a chance to quit their current job role and join a different firm within WIPRO • Fostering a sense of belongingness, creative artistic, and social activities for the employees and their families.	• Has led to a higher retention rate • Moderate Retentions rate increase achieved
INFOSYS	• Initiating one of the best "corporate universities" in the world • Excellent sporting and wellness facilities	
Microsoft-India	• Employees allowed to choose flexible working schedule • Moving people across functions and sections in assisting employees find their area of interest	• Struggling to minimise job-hopping
Mahindra & Co	• Culture change valuing innovation and talent over age and experience • Institutionalising a practice called "reverse mentoring" where young people are given opportunities of mentoring their seniors	• Stabilised job-hopping significantly

Source: (Chatterjee, 2007).

Strategy Adopted by Small and Medium Enterprises (SMEs)

Realising that the way to an employee's heart may not necessarily be through his pocket, these small and medium enterprises (SMEs) are offering the employees what money cannot buy—the right atmosphere, scope for personal growth, lateral movement, and an organization they can call their own.

At GoAir, a recent entrant in the civil aviation sector, every department has its own unofficial HR manager who undertakes the responsibility of understanding his team's aspirations and helping them best realise their potential. They call it "GoCulture." Companies are looking at structural flexibility as a great lure for employees. Zensar Technologies, too, gives its employees room for radical role changes. It also rotates them periodically among departments so that they explore new opportunities within the organization and do not give in to fatigue.

Sona Koyo Steering Systems, the country's largest manufacturer of steering gears with more than Rs 400 crore of revenues, has proved what innovative HR practices can do to check attrition. The company's HR mantra is to hear straight from the horse's mouth. Besides conducting intensive exit interviews with outgoing employees, they also conduct periodic "stay interviews" in which they try to learn from their employees the reasons why they are with them and whether they feel any dissatisfaction with their role in the company.

Pantaloon Retail is a case in point. It rose meteorically from being a mid-sized company till as late a 2006 to become the country's biggest retail player today. Sanjay Jog, chief people officer for the Future Group, the parent company of Pantaloon, says that people are willing to stay on only when they believe that the company would grow fast. This, according to him, is the biggest factor that has worked in Pantaloon's favor. "It is important to look at your people holistically," he says. While addressing individual

problems is important, understanding the group dynamics of the workforce is also crucial (Singh, 2008).

Finally it can be said, be it a small company or big, it must continuously revise the human resource policy. The proprietary thinking of the old-age generation owner in the corporate has to be done away with. If they want to survive they cannot ignore the talented and highly ambitious devoted pools of the young generation. They should try to restructure their corporate with young blood quest for innovation, creation, and satisfaction. Organization should encourage the senior executives or mentors to spend quality time with the young professionals, which would give them a perspective about their career growth. This is the high time Indian companies should realize people do not leave jobs only the leave managers and for that matter management style.

Conclusion

At the end one can agree with Dr Gopalkrishnan, Chairman, TATA Sons, it is important to move for the right reasons, rather than superficial ones, like money, designation or an overseas trip. One should realize that work environment, long-term career prospects, colleagues and company culture are equally important factors in determining an ideal job. One should consider the suitability of whole package rather than being blindfolded with short term benefits.

Management thinkers have begun making a distinction between job-hopping from the individual point of view and job-hopping from an overall industry and economy perspective. Though it seems contradictory, individual job-hoppers are regarded in a negative light while job-hopping as a process which helps to spreads skills and knowledge throughout the industry has its own advantages.

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Every company has two organizational structures: The formal one is written on the charts; the other is the everyday relationship of the men and women in the organization

— Harold S. Geneen

Focus

Intellectual Capital : A Study of Indian Business Schools

Rajesh Kumar Jain and Upinder Dhar

Intellectual capital represents the potential of assets for creating value in organizations. It is non-material wealth and has potential to create more wealth. The subject of intellectual capital is cross-disciplinary in nature and offers a variety of perspectives. The aim of the intellectual capital perspective is to provide a balanced and holistic view of the organization, which includes all value-creating resources that the organization has at its disposal to create capital. These include financial or monetary capital, physical capital, and intellectual capital. The study is an empirical investigation, focused at developing an understanding of intellectual capital, and exploring its constituent factors in business schools. The sample of the study is constituted of 40 respondents—faculty members chosen at random from different B-schools of India. A scale was developed on the basis of relevant literature to collect the data, and appropriate statistical techniques were applied to arrive at the results. The findings of the study have been discussed in detail.

Rajesh Kumar Jain is Senior Associate Professor, Institute of Management, Nirma University, Ahmedabad, India and Upinder Dhar is Director, J.K. Lakshmipat University, Jaipur, India.

Introduction

Intellectual capital represents the potential of assets for creating value in organizations. It is a form of non-material wealth that has potential to create more wealth. The subject of intellectual capital is cross-disciplinary in nature and offers a variety of perspectives. Organizations operate using three types of capital—physical capital (for example, plant, equipment, inventories), financial capital (for example, cash, investments, receivables), and intellectual capital. Most of the accountants are familiar with physical and financial capital, but intellectual capital is only partially recognizable in the form of such intangibles as patents, intellectual property rights, copyrights and franchises, among others. However, intellectual capital encompasses more than these intangibles. It includes a range of kinds of knowledge, tradition, ideas, and innovations. Intellectual capital may also be thought of simply as knowledge that can be converted into profits. With the rise in importance of intellectual capital and the management of intangibles, and with the emergence of knowledge companies, the intellectual capital framework is emerging as a model for industrial and business organizations to consider. The aim of the intellectual capital perspective is to provide a balanced and holistic view of the organization, which includes all value-creating resources that the organization has at its disposal to create capital. These include financial or monetary capital, physical capital and intellectual capital (Peppard and Rylander, 2001).

OECD (1999) defined intellectual capital as the economic value of two categories of intangible assets of a company, that is, organizational and human capital. Organizational capital refers, for example, to proprietary software systems, distribution networks, and supply chains

(Petty and Guthrie, 2000). Ulrich (1998) conceptualized intellectual capital as a multiplicative function of competence and commitment:

Intellectual Capital = Competence × Commitment

According to Wendi R. Bukowitz and Ruth L. Williams (1999), intellectual capital refers to the relationship among human, customer and organizational capital that maximize the organization's potential to create value, which is ultimately realized in some form of wealth. It seems that the difference between various definitions is mainly on the content, which may be covered by intellectual capital. The definition of intellectual capital should be broad enough to enable organizations to embrace the full range of their intangible resources, and specific enough to provide guidance for management to take actions.

Components of Intellectual Capital

There are no universal classifications of intellectual capital. There are four components of intellectual capital as per Magic classification: human capital, organizational capital, market capital, and innovation capital. Other quite interesting classifications and their descriptions have been given by Eustace et al. (1999) who classified intellectual capital into two components, namely intangible goods and intangible competences. Intangible goods are assets and have enforceable ownership rights, which can be bought, sold, and stocked in disembodied form and can also be securities. Examples include licenses, quotas, franchises, copyrights, patents, trademarks, brands, designs, know-how, and trade secrets (Seetharaman, 2002).

Gregorio Martý´n de Castro and Pedro Lo´pez Sa´ez (2008) report about one of the first empirical tests of the theoretically accepted components of intellectual capital. The authors propose that before moving into an internationally accepted system for classification and measurement of intellectual capital, future research should seek a geographical and industrial agreement about the main components of this construct. Based on the survey of 49 firms of Spain comprising of Computer and Electronic Product Manufacturing, Internet Publishing and Broadcasting, Telecommunications, and Internet Service Providers, the authors demonstrate the existence of three main components of intellectual capital. The authors report that their empirical evidence provides only the experience of Spanish high-tech firms; this experience could be different in other countries or industries.

Brooking (1996) proposed the following four components of intellectual capital:

- *Market Assets* (all market related intangibles, including various brands, customers, distribution channels, repeat business, backlog),
- *Human Centered Assets* (collective expertise, creative and problem solving capability, also psychometric data and indicators on how individuals may perform in the situations, such as in a team or under stress),
- *Intellectual Property Assets* (know-how, trademarks, trade secrets, copyrights, patents, design rights, trade and service marks),
- *Infrastructure Assets* (all the elements which make up the way the organization works: corporate culture, methodologies for assessing risk, methods of managing a sales force, financial structure, databases of information on the market or customers, communication systems).

Narvekar and Jain (2006) note in their research that a combination of the analytical and the synthetic cognitive processes are needed to convert intellectual capital into intellectual property including new products and services. Their research in the Indian organizational context examines the innovation process by providing a description of the components and dimensions of intellectual capital that lead to technological innovation. The presence of the three components of intellectual capital is necessary but is not sufficient. For the intellectual capital to manifest into new products or intellectual property, there is a need for an intervention to facilitate innovation. The juxtaposition of absorptive capacity and intuition indicate that innovation occurs under particular uncertainty conditions of organizational environment. Organizations could initiate management interventions to improve the stock of intellectual capital by developing routines that encourage innovation. The visits of cross-functional employee teams to customer and vendor sites help in developing new ideas when such teams are exposed to the actual conditions in which the innovation is used.

Human resource policies that encourage calculated risk taking and provide visibility to innovation outputs through appropriate reward and recognition mechanisms could be initiated. Recruiting employees having cross-disciplinary experience, formalizing the innovation process with charters and actively collaborating with academia also provide impetus to innovation. Innovation is a process of creating something new in the organization and hence organizations that encourage diversity and calculated risk taking are more innovative. Senior managers from industry can initiate

competence building using the managerial concepts employed in the framework. By leveraging the intellectual capital of the organizations, intellectual property, including new products and processes, can be developed, which in turn may improve business performance. However, the research is limited in that the framework has been qualitatively validated in only two publicly held R&D intensive organizations in India.

Objective

To identify the dimensions of intellectual capital in Business Schools.

Method

The Study is an empirical investigation aimed at developing an understanding about intellectual capital in business schools. It is also an attempt to explore the constituent factors as well as dimensions of intellectual capital in business schools.

The Sample of the study is constituted of 40 respondents who were working as faculty members in various B-schools. The respondents were chosen on random basis. The age of respondents ranged from 27 to 52 years with an average of 38 years. There were 29 male and 11 female faculty members.

Tools for Data Collection were based on the survey of relevant literature whereby certain attributes of intellectual capital were identified to frame 39 items/statements. 5-point Likert Type Scale was used to seek response of the respondents, who were asked to tick (✔) mark the appropriate number to indicate the degree of agreement. The scale was mailed to 50 faculty members out of which 40 responded, who belonged to 10 different B-schools.

Tools for Data Analysis such as Simple Correlation and Factor Analysis were used to identify the factors and dimensions constituting intellectual capital in business schools.

Results and Discussion

The scale initially contained 39 items out of which 6 items were dropped after first iteration as these items showed insignificant Item-Total Correlations. The remaining 33 items were found to be significantly correlated with the total score. Reliability coefficient of 0.944 was obtained by applying the split half method, which indicated that the scale is highly reliable. The reliability index of the scale was computed to assess the validity of the measure (Garrett, 1981). The index being 0.972 the validity was considered to be high.

The data were subjected to Factor Analysis and 7 factors were identified: Quality, Development-orientation, Responsiveness, Distinctness, Proactive Culture, Experiential Learning, and Documentation. The factors were further subjected to 2nd order factor analysis which resulted into 3 dimensions—Human Capital, Process Capital, and Stakeholder Capital.

Factor 1: *Quality.* This factor was constituted of five variables. The variables/items being best employees (0.846), rating (0.844), alumni relations (0.814), job involvement (0.714), and academic calendar (0.674). This factor has 14.944 percent of variance and total factor load of 3.892. It is the quality of delivery and service provision which contributes highly in the intellectual capital building of a business school. The quality in turn consists of best of the employees, rating of the B-school by the future prospects, relationship with the alumni of the business school, involvement of employees in the affairs of the school, and adhering to the well planned academic calendar of the business school.

Table 1: First Order Factor Analysis

S. No.	Name of the Factor
1	Quality
2	Development-orientation
3	Responsiveness
4	Distinctness
5	Proactive culture
6	Experiential learning
7	Documentation

Factor 2: *Development Orientation.* This factor was constituted of six variables. The variables/items being upgradation of skills and education (0.838), progressive placement (0.715), development of new ideas (0.667), students' satisfaction (0.612), sensitivity to needs (0.593), and implementation of ideas (0.539). The factor has covered 14.33 percent of variance with a total factor load of 3.964. In the long run, it is development-orientation of the B-school that can ensure its sustenance.

Table 2: Second Order Factor Analysis

Sr. No.	Name of the Dimension
1	Human Capital
2	Process Capital
3	Stakeholder Capital

Factor 3: *Responsiveness.* This factor was constituted of five variables. The variables/items being information seeking (0.818), care for students (0.770), feedback dissemination (0.715), market-orientation (0.675), and human relations (0.628). The factor has covered 13.57 percent of variance with a total factor load of 3.606.

Factor 4: *Distinctness.* This factor was constituted of six variables. The variables/items being attracting talent (0.851), feedback (0.806), distinctness (0.797), value addition (0.723), great new ideas (0.664), and system support innovation (0.659). The factor has covered 13.038 percent of variance with a total factor load of 4.5.

Factor 5: *Proactive Culture.* This factor was constituted of four variables. The variables/items being supportive culture (0.952), responsiveness (0.783), confidence on students (0.763), and idea generation (0.735). The factor has covered 9.862 percent of variance with a total factor load of 3.233.

Factor 6: *Experiential Learning.* This factor was constituted of four variables. The variables/items being non-bureaucracy (0.730), experience retention (0.631), performance consistancy (0.595), and satisfaction with institute (0.466). The factor has covered 9.56 percent of variance with a total factor load of 2.422.

Factor 7: *Documentation.* This factor was constituted of three variables. The variables/items being efficiency (0.658), easy access to information (0.646), and students' need satisfaction (0.520). The factor has covered 6.149 percent of variance with a total factor load of 1.924.

Dimension 1: *Human Capital.* This dimension was constituted of two factors. The factors being experiential learning (0.639), and distinctness (0.573). The dimension has covered 14.286 percent of variance with a total factor load of 1.212.

Dimension 2: *Process Capital.* This dimension was constituted of three factors. The factors being proactive culture (0.583), responsiveness (0.566), and quality (0.499). The dimension has covered 14.286 percent of variance with a total factor load of 1.648.

Dimension 3: *Stakeholder Capital.* This dimension was constituted of two factors. The factors being documentation (0.752), and development-orientation (0.575). The dimension has covered 14.286 percent of variance with a total factor load of 1.326.

Table 3: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.927	0.930	39

Table 4: Item-Total Statistics (1st Iteration)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
CoopAmEmplees	139.0741	598.302	0.148	0.929
HmnRelation	140.0000	575.923	0.497	0.925
GreatNewIdeas	139.7778	567.410	0.607	0.924
IdeaImplemntn	140.0000	554.692	0.873	0.921
UpgradSkllEdu	139.5556	569.179	0.642	0.924
DvpNewIdeas	139.6296	556.165	0.782	0.922
BestEmplyees	139.7778	570.487	0.585	0.924
SatisfactnWithInstitute	139.3333	571.769	0.804	0.923
PerformConsistncy	139.5185	568.952	0.713	0.923
AttrctTalent	139.7407	567.430	0.595	0.924

Table 4 Continued...

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
ExpRetnsn	140.2222	582.795	0.325	0.927
LernFrmOthrs	139.1481	605.131	0.060	0.929
VoiceOurOpinions	140.0370	606.729	0.006	0.930
JobInvlvemnt	139.4815	578.105	0.565	0.925
Distnctnss	139.8148	579.311	0.523	0.925
StdsSatisfac	139.5926	558.635	0.822	0.922
Responsvness	140.2963	593.370	0.217	0.928
AcadmcClndrs	139.3333	583.154	0.500	0.925
PrgrsvPlcmnt	138.9630	590.037	0.501	0.926
Rating	139.8889	563.333	0.656	0.923
AlumniReln	139.8889	572.179	0.601	0.924
StdsPreference	139.1111	611.026	–0.066	0.930
Feedback	139.6296	579.473	0.499	0.925
FeedbckDisse	139.8889	577.026	0.465	0.925
SnstvtoNds	139.5556	571.333	0.761	0.923
CareFrStds	139.1481	582.900	0.427	0.926
StdsNdsStsfcn	139.5926	570.481	0.632	0.924
NewCrseLnch	139.6667	597.154	0.133	0.929
CnfdnceOnStds	140.0000	580.923	0.378	0.927
InfrmnSeeking	139.5926	579.943	0.594	0.924
ValueAddn	140.0000	580.308	0.449	0.926
IdeaGenrtn	140.2963	580.524	0.448	0.926
MktOrientn	139.7037	572.678	0.680	0.924
Effeciency	139.4074	580.943	0.546	0.925
EsyAccsstoInfo	139.7037	566.293	0.694	0.923
SystSpprtInnvn	139.8148	564.157	0.689	0.923
NonBureaucrcy	139.8519	573.208	0.482	0.925
EmpIntmcy	140.5185	616.721	–0.146	0.932
SpprtvCultre	139.5185	585.567	0.336	0.927

Table 5: Item–Total Statistics (2nd Iteration)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
Hmn Relation	117.3333	559.077	0.508	0.943
Great New Ideas	117.1111	549.410	0.638	0.942
Idea Implemntn	117.3333	539.077	0.868	0.940
UpgradSkllEdu	116.8889	552.718	0.649	0.942
DvpNewIdeas	116.9630	538.806	0.806	0.940
BestEmplyees	117.1111	554.641	0.581	0.943
SatisfactnWithInstitute	116.6667	554.769	0.824	0.941
PerformConsistncy	116.8519	554.362	0.684	0.942
AttrctTalent	117.0741	549.994	0.616	0.942
ExpRetnsn	117.5556	567.564	0.309	0.946
JobInvlvemnt	116.8148	561.464	0.573	0.943
Distnctnss	117.1481	563.900	0.507	0.943
StdsSatisfac	116.9259	543.456	0.808	0.941
Responsvness	117.6296	577.781	0.203	0.946
AcadmcClndrs	116.6667	566.154	0.515	0.943
PrgrsvPlcmnt	116.2963	572.601	0.531	0.943
Rating	117.2222	547.179	0.658	0.942
AlumniReln	117.2222	555.103	0.618	0.942
Feedback	116.9630	562.575	0.511	0.943
FeedbckDisse	117.2222	558.564	0.501	0.943
SnstvtoNds	116.8889	554.410	0.779	0.941
CareFrStds	116.4815	567.644	0.408	0.944
StdsNdsStsfcn	116.9259	553.840	0.641	0.942
CnfdnceOnStds	117.3333	564.769	0.376	0.945
InfrmnSeeking	116.9259	562.533	0.620	0.943
ValueAddn	117.3333	562.462	0.476	0.944
IdeaGenrtn	117.6296	565.088	0.434	0.944
MktOrientn	117.0370	556.268	0.685	0.942
Effeciency	116.7407	564.430	0.551	0.943
EsyAccsstoInfo	117.0370	551.345	0.674	0.942
SystSpprtInnvn	117.1481	547.977	0.692	0.942
NonBureaucrcy	117.1852	557.926	0.468	0.944
SpprtvCultre	116.8519	568.285	0.351	0.945

Table 6: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.022	39.460	39.460	13.022	39.460	39.460	4.931	14.944	14.944
2	4.448	13.478	52.939	4.448	13.478	52.939	4.730	14.333	29.277
3	2.610	7.911	60.849	2.610	7.911	60.849	4.478	13.570	42.847
4	2.127	6.446	67.295	2.127	6.446	67.295	4.303	13.038	55.885
5	2.001	6.062	73.357	2.001	6.062	73.357	3.254	9.862	65.747
6	1.508	4.568	77.925	1.508	4.568	77.925	3.155	9.560	75.306
7	1.165	3.530	81.455	1.165	3.530	81.455	2.029	6.149	81.455
8	0.991	3.002	84.457						
9	0.900	2.728	87.185						
10	0.755	2.288	89.473						
11	0.705	2.137	91.610						
12	0.566	1.714	93.325						
13	0.510	1.545	94.870						
14	0.456	1.380	96.250						
15	0.388	1.176	97.426						
16	0.240	0.728	98.153						
17	0.205	0.623	98.776						
18	0.118	0.356	99.132						
19	0.100	0.304	99.436						
20	0.069	0.209	99.644						
21	0.047	0.143	99.788						
22	0.035	0.105	99.892						
23	0.020	0.061	99.954						
24	0.015	0.046	100.000						
25	3.80E–016	1.15E–015	100.000						
26	2.66E–016	8.07E–016	100.000						
27	1.40E–016	4.24E–016	100.000						
28	3.23E–017	9.79E–017	100.000						
29	–2.72E–017	–8.23E–017	100.000						
30	–1.75E–016	–5.31E–016	100.000						
31	–1.95E–016	–5.92E–016	100.000						
32	–3.53E–016	–1.07E–015	100.000						
33	–1.66E–015	–5.04E–015	100.000						

Note: Extraction Method: Principal Component Analysis.

Table 7: Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
BestEmplyees	0.846						
Rating	0.844						
AlumniReln	0.814						
JobInvlvemnt	0.714						
AcadmcClndrs	0.674						
UpgradSkllEdu		0.838					
PrgrsvPlcmnt		0.715					
DvpNewIdeas		0.667					
StdsSatisfac		0.612				0.472	
SnstvtoNds		0.593	0.475				
IdeaImplemntn		0.539	0.494			0.524	
InfrmnSeeking			0.818				
CareFrStds			0.770				
FeedbckDisse			0.715				
MktOrientn			0.675			0.412	
HmnRelation			0.628				
AttrctTalent				0.851			
Feedback				0.806			
Distnctnss	0.457			0.797			
ValueAddn	0.471			0.723			
GreatNewIdeas		0.564		0.664			
SystSpprtInnvn		0.575		0.659			
SpprtvCultre					0.952		
Responsvness					0.783		
CnfdnceOnStds					0.763		
IdeaGenrtn		0.425			0.735		
NonBureaucrcy						0.730	
ExpRetnsn						0.631	
PerformConsistncy						0.595	
SatisfactnWithInstitute		0.413	0.424			0.466	
Effeciency			0.469				0.658
EsyAccsstoInfo	0.477						0.646
StdsNdsStsfcn	0.487		0.430				0.520

Notes: Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
A Rotation converged in 10 iterations.

Table 8: Total Variance Explained (Second Order Factor Analysis)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.000	14.286	14.286	1.000	14.286	14.286	1.000	14.286	14.286
2	1.000	14.286	28.571	1.000	14.286	28.571	1.000	14.286	28.571
3	1.000	14.286	42.857	1.000	14.286	42.857	1.000	14.286	42.857
4	1.000	14.286	57.143						
5	1.000	14.286	71.429						
6	1.000	14.286	85.714						
7	1.000	14.286	100.000						

Note: Extraction Method: Principal Component Analysis.

Table 9: Rotated Component Matrix (Second Order Factor Analysis)

	Component		
	1	2	3
EXPRNL LRNG	0.639		
DISTNCTNESS	0.573		
PROACTV CULTRE		–0.583	
RSPNSVNESS	–0.418	0.566	
QUALITY		0.499	
DOCUMENTATION			0.752
DEVP .ORNTN			0.574

Notes: Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
A Rotation converged in 5 iterations.

Conclusion

Based on the factor analysis it is noted that intellectual capital in business schools is consisting of the following main dimensions:

- Human Capital
- Process Capital
- Stakeholder Capital

In a survey of ICFAI Business School (Gayatri, 2008b) the author mentions of creating a central facility for systematic archiving of the intellectual output of faculty and research staff. The repository so created is useful to faculty and other staff as it provides visibility to the work done. It is one of a kind of initiative by a business school which have implemented an open access institutional digital repository to capture the intellectual capital and its sharing. However the study observes that the growth of the intellectual repository of intellectual capital depends largely on faculty participation and self-archiving. In fact no system will be successful without the participation of human capital, and its interaction with process and structural capital.

Quite simply, human capital represents the individual knowledge stock of an organization as represented by its employees (Bontis et al., 2002). It is the accumulated value of investments in employee training, competence and future (Skandia, 1996):

> Human capital is important because it is a source of innovation and strategic renewal. The essence of human capital is the sheer intelligence of the organizational member. The scope of human capital is limited to the knowledge node (that is, internal to the mind of the employee). It can be measured (although it is difficult) as a function of volume (that is, a three degree measure encompassing size, location, and time). It is also the hardest of the three sub-domains of intellectual capital to codify. (Bontis, 1998: 65–66).

David Skyrme Associates' (2000) research proposes 10 different dimensions of creating knowledge in schools as leadership, cultural structure, processes, explicit knowledge, tacit knowledge, knowledge hubs and centers, market leverage, measures, people skills, technology infrastructure. The dimension of research which was developed basing on these ten dimensions and adapted to new research is as follows.

Cevat Celep and Buket Cetin (2005) while emphasizing the need of *process* for organizations which

continuously create knowledge, maintain that explicit knowledge or information lends itself to systematic handling and widespread dissemination, using techniques of information management. As much organizational knowledge is tacit and in people's head, organizations look at range of processes and practices that help both tacit and explicit knowledge transfer. In the process of creating a knowledge-based society schools have an important innovative and developing structure and the same should also be modernized. Therefore educational organizations should reconstruct themselves by observing and assimilating unstable and changing conditions. In the process of reconstruction the most important point that should be taken care of is the way these efforts and process are made true by school principals in the management process. Such approach will prepare and take our schools into the future should be placed and included into our organizational systems.

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An empowered organization is one in which individuals have the knowledge, skill, desire and opportunity to personally succeed in a way that leads to collective organizational success.

— Stephan R. Covey

Organizational SAP–LAP Analysis of Retention of Managerial Employees in a Power Sector Organization

Koustab Ghosh and Sangeeta Sahney

Turnover of employees at managerial levels has been widely recognized as a critical organizational concern. The problem appears even acute for organizations belonging to service sector. A number of studies have shown that compensation factor alone does not explain the retention of managerial employees in the organization. The focus of developing this present study lies in designing and balancing the organizational social and technical subsystem elements in order to moderate the turnover of managerial employees in the company. The SAP–LAP framework has been adopted as the methodology of organizational analysis. The findings and the suggestive actions from the study attempt to find solutions to the problem of managerial turnover faced by the company.

Koustab Ghosh is an Assistant Professor at Calcutta Business School, Kolkata and Sangeeta Sahney is an Assistant Professor at Vinod Gupta School of Management, Indian Institute of Technology, Kharagpur.

Theoretical Framework

The analysis of the impact of organizational sociotechnical system on retention of managerial employees at junior and middle levels is the focus of developing this study. Organizational social subsystem has been reviewed through the supervisory relations (Dierendonck et al., 2001), peer group interaction (Van der vanquet et al., 1998), and person–organization fit (O'Reilly et al., 1991). Organizational technical subsystem has been analyzed in terms of nature of job (Ryan et al., 2000), work technology (Shani et al., 1992), and received organizational support (Rhoades and Eisenberger, 2002). The above social and technical subsystem factors were further contextualized to depict the various organizational issues pursuant to the process of retention of managerial employees in this company. Although any organization is supposed to be designed by balancing the components of these two subsystems, in reality a gap exists between the theory and practice. How this gap between the principle and practice impacts the retention of managerial employees in the organization is the subject matter of this study. The organization has been analyzed through applying flexible systems methodology (Sushil, 1999), that is, Situation–Actor–Process, Learning–Action–Performance (SAP–LAP) analysis to bring about the implicit organizational sociotechnical issues of managerial employee retention in the given context.

SAP–LAP contains the basic entities in any management context and their associated managerial functions and attributes. Basically, any managerial context consists of a "situation" to be managed, an "actor" or a group of actors to deal with the situation and a "process" or a set of processes that respond to the situation and

recreate it. "Situation" is external and internal environment of the organization and its performance. The "actor" can be individual managers, or groups, departments or class of actors such as suppliers, competitors, government, consultants, management, employees, etc. The "process" is the overall transformation process that converts a set of inputs into outputs to recreate the situation (Sushil, 1999).

LAP is the synthesis of SAP, which includes interplay of Learning, Action, and Performance. There is a need to learn about the situation, and actor and process and bring out key learning issues of interest. Based on the learning, the action is to be taken on the fronts of situation, actor or process or the relevant interfaces. Depending upon the effectiveness of actions, performance is generated in terms of improved processes/actors and better situational parameters. The steps for analysis through using SAP–LAP framework are: understanding situation, actors and roles, evolving process, learning issues, suggested actions, and expected performance (Sushil, 1999).

Sample and Data Collection

The study has been prepared by collecting data from both primary and secondary sources. Personal in-depth interviews of select people at junior and middle executive levels were conducted. The interview questions were composed on the basis of their relevance to the study, choice of respondents, ease of response, and content of questions (Brenner et al., 1985; Holstein and Gubrium, 1995). The responses to the interview schedule by about 70 junior and middle level managerial personnel were the prime source of qualitative data for this study. The samples were drawn from the corporate office in the city of the national capital, and also from the zonal offices/units in and around national capital territory. Other relevant supportive information was collected by examining the annual reports of the company, and from the relevant websites.

The respondents were first categorized as per the level, functional specialization, and work experience in the present organization under study. Once these classifications were done, an extensive content analysis was conducted on the entire data set. During the course of personal interviews any new points of view that came up eventually, and was found significant and relevant to the dimension of the study, were recorded separately. At the end of compilation of responses, they were incorporated in the final narration of the study (Yin, 1994; Stake, 1995). Given the academic scope of the study, mental precaution was taken by the authors to drive the discussion in the desired direction.

Overview of Business and Future Plans

This company was founded in 2002 as a subsidiary of a private sector organization engaged in the generation, transmission, and distribution of power in India. It is presently engaged in the distribution of power in the city of national capital and serves a population of about 4.5 million people spread across 510 square kilometers with a registered consumer base of about 1 million. It bears a peak load of 1,150 mega value added and an annual energy consumption of around 6,000 mega units. The consumers have been benefited out of the facilities like online payment of bills, home delivery of new connections, gift electricity coupons, prepaid meters, and so on.

The company has been able to bring down the area-wise transmission and consumption losses by nearly 60 percent from an opening level of 53 percent in 2002. It has also established automated meter reading system that has eliminated the manual intervention in the process from meter reading to the final printing of the bill. The company has also introduced automated bill payment kiosks, which work in the same line of an ATM machine.

It has also won several prestigious awards including the award from the Ministry of Power, Government of India. It was accredited with ISO 9001, ISO 14000, and ISO 18000. The company has also made active efforts in the area of corporate social responsibility. Among many other things done in this regard, it had become a signatory to the Compact Charter of a global body, and has been a part of an elite group of 1,200 organizations world over committed to human rights, labor, environment and anti-corruption. The company has also substantiated significant improvement in power supply reliability shown through the reliability indices in Table 1. Power supply has improved over the years, owing to the investment in the network and stringent maintenance practices.

The company has won the "Utility of the Year Award 2008" from an international association in Asia–Pacific region. The company has also recently won "India Power Award 2008" for overall utility performance in power distribution. It has also won a prestigious international award from a research organization in the USA. It has plans to set up 108 Mega Watt power generation plant to cater to the growing needs of national capital.

Table 1: Improvement in Power Supply Reliability

Indices	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
System Average Interruption Duration Index (hrs)	77	36	23.6	9.3	7.17	6.74
System Average Interruption Frequency Index (nos)	35	18	13	5	5.44	5.26
Consumer Average Interruption Duration Index (hrs)	2	2	1.87	1.75	1.31	1.19

Situation

An overview of the company's internal and external business situation is presented below:

1. Not withstanding the fact that India's power sector is passing through major expansion activities in terms of capacity generation and distribution, the sector had already witnessed an employee turnover rate of 35 percent in 2007 and 25 percent in 2008. The attrition rate is expected to result into manpower crunch for both state-owned and private organizations.
2. There will be a need for fresh requirements of over 25,000–35,000 professional and skilled workforces in the sector, according to the estimates made by the Associated Chambers of Commerce and Industry of India (ASSOCHAM).
3. The work on four ultra mega power projects, with the estimated capacities of 16,000 Mega Watts is likely to be commenced from 2008 onward and would call for skilled personnel and professionals. In addition, power professional recruitment number could go over 8,000–10,000.
4. The ASSOCHAM report also revealed that rural electrification program sector is likely to create job opportunities. These new ventures, according to ASSOCHAM would require a huge workforce leading to the forecast that the Indian power sector would create abundant job opportunities.

A careful observation of Table 2 reveals a few significant inferences. Firstly, both for junior and middle level managerial employees the company has experienced sharp increase in the turnover rates from 2005 to 2007. Secondly, the rate of turnover was higher for junior managerial employees than the managerial employees in the middle level. This could be attributed to the fact that until recently many of the middle level managerial employees were promoted from below by virtue of experience, and some of them were not otherwise professionally qualified. So although the market opportunity was good, their mobility was limited compared to junior managerial employees who were all better qualified people. Also the middle level managerial employees could not easily disturb their family settlement because of working spouse, children's education, and so on. Thirdly, within junior level managerial employees the turnover was highest among the trainees (technical and non-technical), who were the

Table 2: Employee Turnover Rates (in Percentages) of Junior and Middle Level Managerial employees in the Previous Years

Years	2005	2006	2007	2008 (Till November)
Junior managerial employees:	18	31.6	52.67	17.55
i) Technical trainees	26	43.6	74.2	22.2
ii) Non-technical trainees	11.2	31.7	61	16.8
iii) Assistant officers/technical	24.3	30.1	41.8	20.1
iv) Assistant officer/non-technical	10.8	21	33.7	11.1
Middle managerial employees:	15	26.66	35.46	17
i) Managers	18.3	32.6	39.4	16.2
ii) Assistant managers	16.10	28.8	42.3	21.3
iii) Officers	10.3	18.6	24.7	13.5

Figure 1: Manpower Structure in Zonal Office

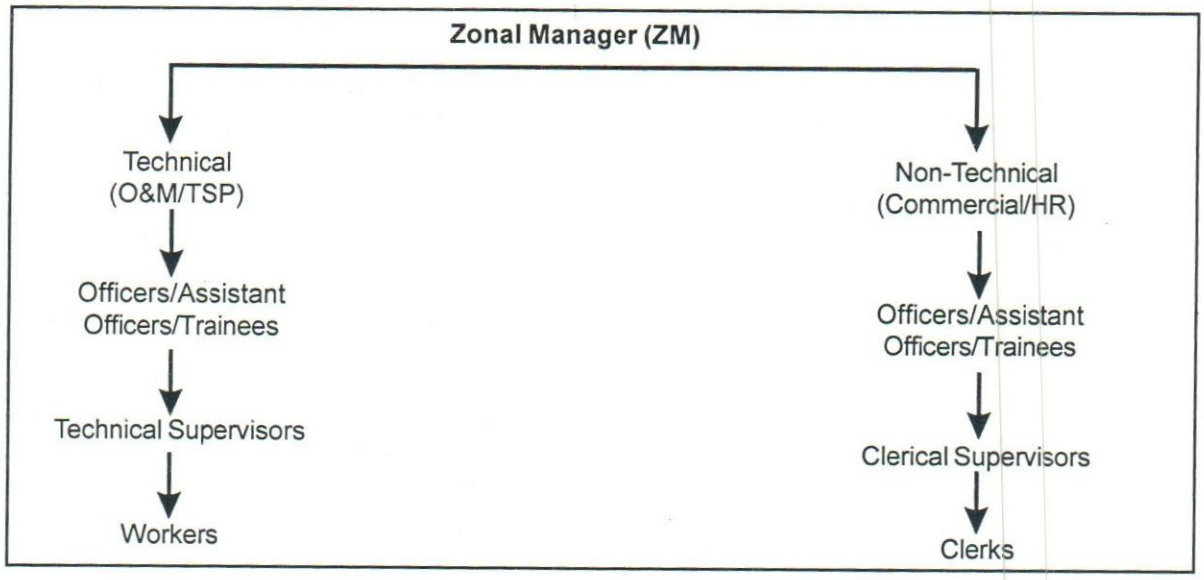
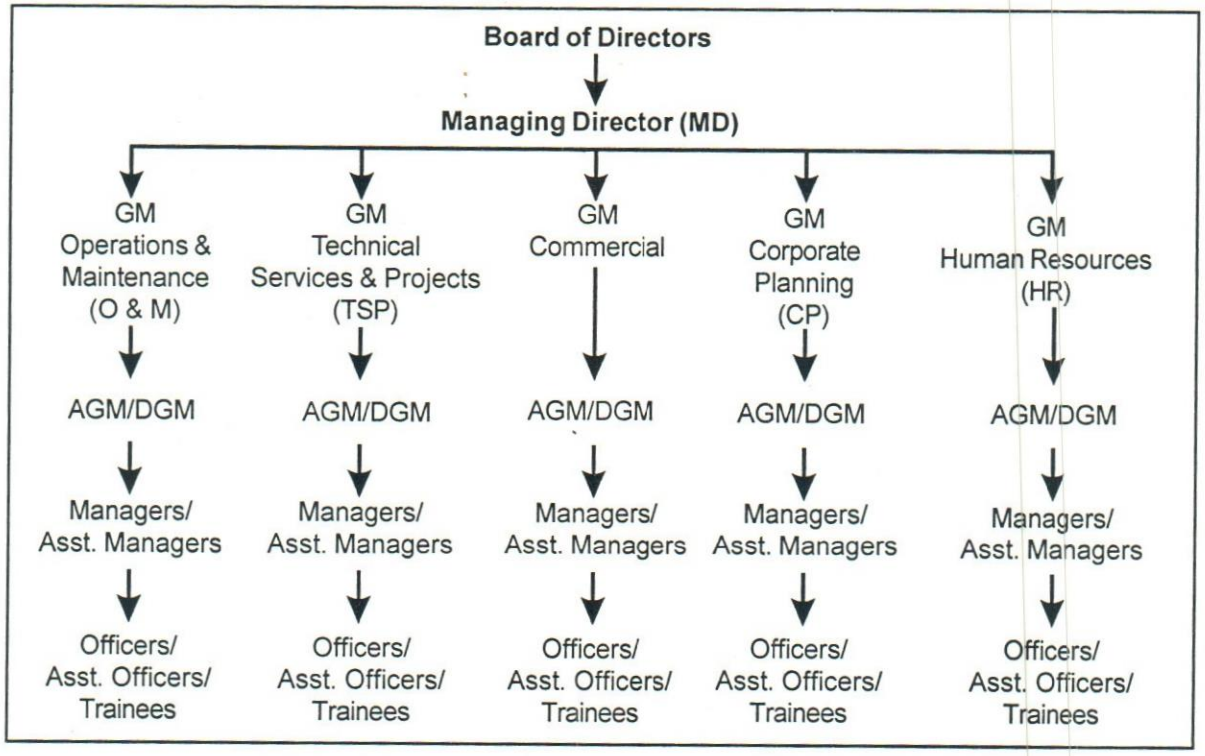


Figure 2: Organization Structure at Corporate Office



lowest cadre in the level. This was due to the fact that the company was not able to meet up their expectations in different fronts. Within the level of middle managerial employees, turnover was highest for assistant managers followed by managers and officers. One interesting observation that came out during the study was majority of managers and assistant managers, who left the organization, were from HR department. It was followed by other functions like technical services and projects, operations and maintenance, and commercial.

Actor

The following groups of internal people were involved with various activities that the company pursues, and their retention was found to have an impact on the present operations and future expansion plans of the company (Figure 1, Figure 2).

Process Factors

The process of retention of managerial level employees is seen to be influenced by a set of organizational social and technical subsystem factors. The following organizational issues in particular have been explored in detail as crucial factors to the process of turnover of managerial employees in this company:

1. *Lack of Social Integration:*

(a) The managerial employees at middle and junior levels had no information about the major business plans and achievements of the company. Senior managerial employees of the company did not find it important to share the required information at levels below them and no effort was there to involve the junior and middle managerial employees into the organization.

(b) The junior and middle managerial employees perceived the senior managerial employees more as self-protective and subservient to the thoughts and actions of top management.

(c) Top management policies were many times not transparent, and were based on "adhocism." Even the absences of informal get-together or gathering between the senior and other levels of managerial employees made the gap even wider.

2. *Dilemma of Junior Managerial employees:*

(a) At the time of recruitment, junior technicians/ engineers were told that on completion of probationary service, they would be sent to higher order technical institutions for pursuing special degree courses from time to time. No such steps were taken in that regard.

(b) On appointment, the junior managerial employees were given accommodation in company guesthouses for one year, and subsequently they had to arrange the accommodation on their own to vacate the company premises. Most of the junior managerial employees faced difficulty to find suitable accommodation outside, as they were not given appropriate house rent allowance based on prevailing market rate.

(c) At zonal offices, majority of junior technicians and engineers were outstation candidates. Many of them received differential treatments from their immediate supervisors in terms of performance appraisal, work guidance, and leave sanctions. Some of them could not visit their homes for months together, and felt highly overworked. These comparisons at different zonal offices for the same level of employees raised questions about the uniform implementations of employment policies.

(d) The recruited engineers were told by the company officials that they would be suitably rotated on different job assignments to reduce the mental fatigue and enhance professional developments. Till date no such steps have either been initiated or implemented by the company. The junior managerial employees at the corporate office felt that many organizational levels have been created. At times, reporting to more than one superior created unnecessary confusion in job responsibilities and communication.

3. *Issues at Zonal Offices:*

(a) Work pressure was high at zonal offices. They also lacked infrastructural facilities compared to corporate office. Moreover the shortage of manpower, especially at technical levels, affected the operations and customer service of zonal units.

(b) People at zonal offices indicated that sometimes the zonal head deliberately suppressed the information that came from the corporate office for dissemination. Many of the company policies were not implemented properly, and not integrated at all levels. The supervisors were not cooperative, and did not provide any kind of mentoring/ guidance.

(c) Employees did not receive any recognition/ appreciation for a job well done. The newly introduced scheme of recognizing employee performance called "SAABASH" also did not work properly. The award went to only such persons, who were in good books of either the zonal manager or HR people working on employee performance and recognition scheme, irrespective of actual performance of the employee. For the same performance rating, corporate office did not give equal increments. There was not adequate coordination between the corporate and zonal offices, and among all the zonal offices.

4. *Organizational Policies and Practices:*

(a) It was also found that the cordial working relationship among various departments of the company like customer service, legal and enforcement group, HR, information system group, etc., was missing. Jobs were not always distributed according to the merit, qualification, and experience of the employees.

(b) Confidential rating system made the appraisal procedure vague and unreliable. Performance feedback and individual development plans were hardly shared at any level. Reappointment of senior officials after retirement blocked the movement of junior and middle managerial employees to the levels upwards.

(c) Although participatory forums existed, top management on taking important decisions never consulted representative managerial employees.

(d) Recently, the company has developed and upgraded its internal managerial training facility to a considerable extent, and a lot of programs have been conducted round the year. But lack of career planning and mentoring of junior managerial employees has seriously impeded their future movements and expectations inside the company. This was mainly because the company did not have a formal HR planning exercise at periodic intervals.

5. *Non-delivery of Service by HR:*

(a) At times, salary slips were not received on time, and salaries were not credited in accounts on time. The HR department did not update leave status in database, and they were remarkably slow in responding to employee queries on pay and benefits. The respondents also mentioned that HR people did not provide documents like NOC for education/ passport, renewal of medical cards, LTC sanction and claim, no timely redressal of employee complaints registered in SARTHI (a scheme made for speedy resolution of employee grievances).

(b) Lack of face-to-face interactions with employees at zones/units made impossible for HR people to make their presence felt. Also the high turnover of people in HR department made it difficult for people in other units/departments to recognize, establish relationships, and make interactions with the HR managerial employees.

Points Learned

From the SAP (Situation–Actor–Process) analysis of the company, the following issues emerge in the context of retention of managerial employees in the organization:

1. The combined effect of all the above-mentioned organizational issues generated the intention to leave the organization among the managerial employees. It significantly affected the turnover of junior and middle level managerial employees in the company.

2. Lack of involvement and socialization generated feeling of mistrust and doubt about the actions and policies of management in the minds of middle and junior managerial employees. They even expressed the concern that they were not sure if the company was moving in right direction and about the honest

Table 3: Ranking of Major Turnover Factors Elicited from Responses of Junior and Middle Managerial employees

Serial No.	Turnover Factors	Percentage of Respondents	Rank
1	Development of Employees (Advancement and career development, recognition and appreciation, performance management system, training and development, job content and role clarity)	72	1
2	Social Integration (Team work and cooperation, superior–subordinate relationship, top management–employee relationship, HR–employee interface, organizational norms and values, organizational belongingness)	66	2
3	Organizational Support (Working conditions, compensation, work–life balance)	58	3
4	Managerial Practices (Empowerment in decision making, information sharing, internal communication, employment policies)	56	4

intention of the management for making the company a better workplace.

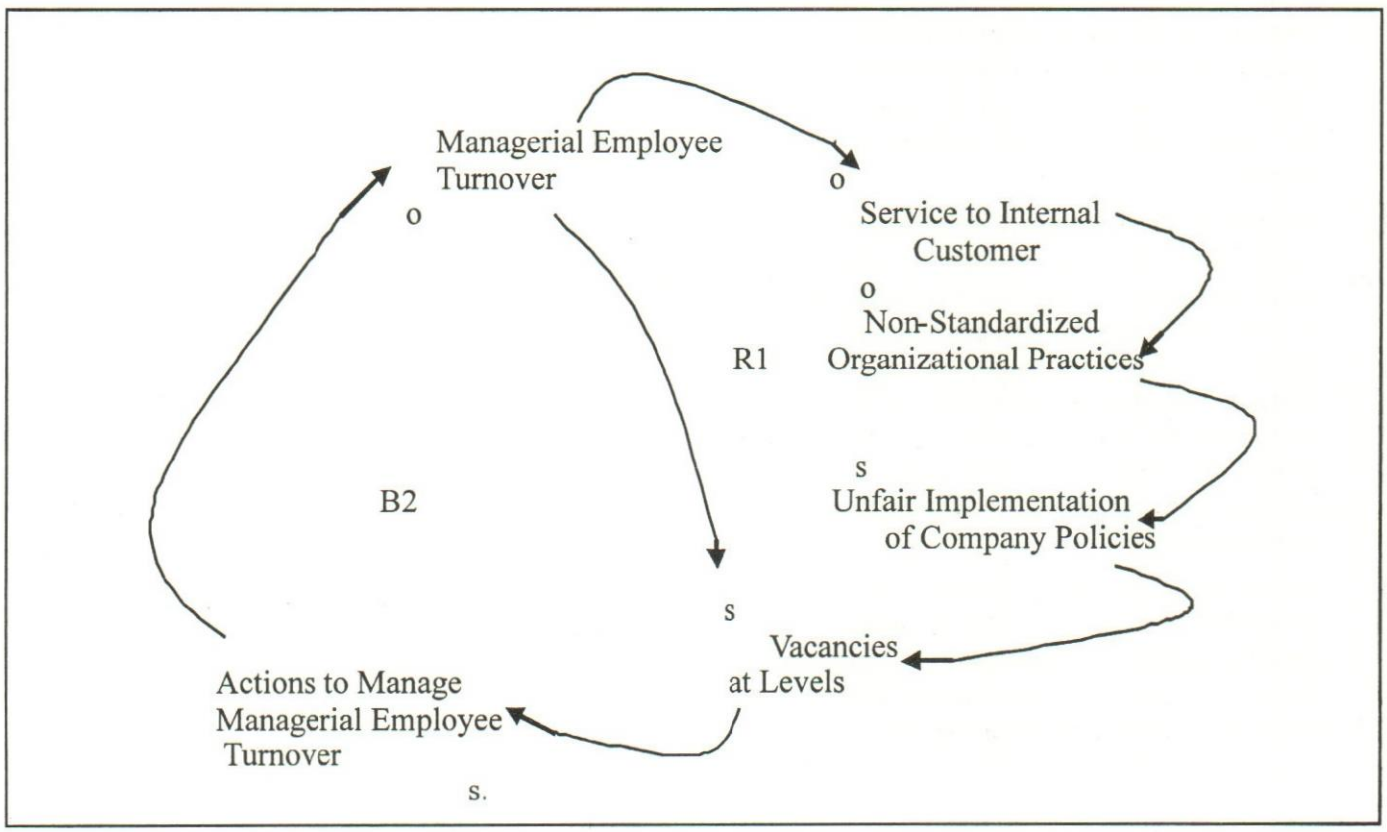
3. Lack of interaction with senior management made them feel alienated and uninvolved in the major business/organizational decisions of the company.

4. Also the upward trend in national economy and the suitable job opportunities available outside the company made an exodus of junior and middle level managerial employees. The economic downturn in 2008 improved the situation of managerial employee turnover in the company. Table 3 shows the categorization of managerial responses that were found to be responsible for managerial employee turnover in the organization.

Table 3 shows that 72 percent of total respondents from junior- and middle-level managerial employees, who were interviewed, expressed that the lack of development of employees was the prime reason for people leaving the organization. It was followed by lack of social integration of employees with the organization in terms of different parameters as mentioned in Table 3, 58 percent of respondents in the interview said that organizational support facilities including compensation was responsible for managerial employee turnover, and closely followed by managerial practices (56 percent) in terms of empowerment, information sharing, employee policies, and so on.

In Figure 3, the causal–loop analysis shows that the turnover of managerial employees at various levels creates more vacancies (indicated by loop link s), and as there are more vacancies, more proactive actions should be taken to manage turnover of managerial employees (indicated by loop link s). The more the stronger actions are followed to retain managerial employees, the less will be the level of managerial employee turnover (indicated by loop link o). Thus the main loop (B2) balances itself. The inside analysis of the organization shows that the high managerial employee turnover (especially at HR department) negatively effects the service to the internal customers of the company (indicated by loop link o), and hence it can be attributed to non-standardized organizational practices in the company (indicated by loop link o). Again, the non-standardized organizational

Figure 3: Causal-Loop Diagram of Managerial Employee Retention Analysis



practices lead to unfair implementation of company policies (indicated by loop link s). Finally, the reinforcing loop (R1) gets connected to the main loop (B2) implying that the more the unfair implementation of company policies, the more would be the vacancies at junior and middle managerial employee levels (indicated by loop links).

Suggested Actions

In view of the above learned facts and information, a set of suggestive action plans for the company has been prepared to mitigate the turnover of managerial employees at junior and middle levels.

1. An organizational ambience of working together at all levels has to be created where employees feel relaxed to raise issues. Creation of bi-partite forums with clear set of functions, responsibility, powers, financial allocations, continuous review to keep the interest of the members and others, how are the interests of the employees being articulated, how are decisions taken, what is the implementation mechanism and follow up.
2. Performance feedback has to be shared and explained by the supervisors logically and unambiguously. Performance Management System (PMS) has to be designed as a facilitator of career growth. To promote/encourage employees, on circle/district/zonal bases, employees who have done extra work should be suitably awarded by the department head.
3. The company has to improve HR efficiency by being prompt and responsive to internal customers in providing services. HR officials must be sensitive to all the interpersonal and development related aspects. It is suggested that a thorough review in the form of Audit of Personnel/HR Function should be conducted every two years. The company should undertake a specific human resource planning exercise, which may include a career progression path.
4. The management has to carefully implement the smanagerial employee retention strategy that should be based on an analysis of why people leave through exit interviews. Periodic attitude surveys will provide useful data in this regard.

Expected Performance

The proper implementation of the suggested action plans would considerably improve the retention of managerial employees that can help the company to satisfactorily deliver service to its customers in the present operational businesses. It stands particularly important, as the company is an essential service sector.

1. The management has recently conducted an organization wide employee satisfaction survey, which also revealed the similar problems and issues that the managerial employees in the middle and junior level were facing in the company. So unless these issues are addressed properly, the problem of managerial employee turnover will persist in the organization.
2. The management has taken some moves especially in the area of streamlining HR and administrative services to the employees in all departments and units. But the high turnover of people in HR department itself had made the situation even more difficult. So focus on retaining HR people in their jobs should be taken as a first step toward controlling managerial employee turnover in other units/functions.
3. A lot has to be done on many different issues, including the reorganization of zonal offices. In this situation, taking judicious decisions and their speedy implementations by management could only salvage the company from high attrition rates that has affected the customer service of the company.
4. Following the industrial recession in 2008, the turnover of managerial employees had come down to a large extent in the company. As the situation of industrial recession would improve in near future, the mobility of managerial level employees might go up all over again. So the company would have to face the brunt of managerial employee turnover perhaps even at a higher rate. Hence the focus on developing a balanced organizational sociotechnical system as a corrective mechanism to overcome this problem of managerial employee turnover is poised as a desirable solution.

Synthesized findings from the study are shown in Table 4.

Table 4: Synthesized Findings from the Study

Parameters	Findings
1. Lack of social integration	Found between the top management and the junior and middle level executives as the policies and actions of top management were perceived to be non-transparent and unfair
2. Under/Misutilization of human resources	No job rotation for junior level technical executives resulting in monotony and skill stagnation
3. Organizational policies and practices	Confidential rating system was not transparent, individual career planning not linked to training and development, and absence of HR Planning at different levels
4. Support facilities and compensation	Infrastructural support facilities not found adequate at zonal offices, compensation found satisfactory at different levels
5. Employee praise and recognition	The employee recognition schemes were not implemented properly
6. Difference between corporate and zonal offices	Differences between the corporate and zonal offices existed in terms of infrastructure, work load, information sharing, and reward schemes
7. Supervisory practices and interpersonal relations	Differential treatments by the immediate supervisors were found for corporate and zonal units, inter-group conflict existed between operation and support people
8. Delivery of service by HR	Employees were not satisfied with the administrative service of HR department, HR people lacked communication and interaction with employees at other units
9. Retention of Managerial Employees	Turnover of junior and middle level executives high

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Experience is the child of thought, and thought is the child of action.

— Benjamin Disraeli

Focus

Talent Acquisition and Retention Strategies of SJVNL—An Analysis

Jai Singh Parmar

In a globally competitive world, where knowledge and ideas are developing quickly and with the recovery of global economy, the creation and acquisition of jobs are phenomenally increasing for the best suitable talent. India has recovered faster than the other countries of the world. As a result many multinational companies in different sectors have planned entered India with aggressive market plans, capturing the bullish market sentiments. Infrastructure, engineering, telecommunication, insurance, and retail are all flourishing with the growth of Indian economy. The rise of these industries and fast economic recovery have resulted into increase in jobs in the market and minimising the job insecurities among the professionals, which has allowed them to hunt for better opportunities. Hence, the organizations are facing the dearth of talented manpower, problems of attracting the employable talent, and the strategies to be developed in order to reward and retain the existing talent. The Satluj Jal Vidut Nigam Limited (SJVNL)—a Mini Ratna Schedule "A" public sector undertaking—enjoys the strategic importance in the development of the State of Himachal Pradesh and nation both because a little disruption in the work and performance of the corporation leads to enormous losses. This corporation may be facing the dearth of talent due to exit–quits among best performers for better job opportunities elsewhere. Therefore, it is necessary to understand what strategies the corporation is executing for the talent management. The present study is an attempt in this direction.

Jai Singh Parmar is currently Associate Professor at the Himachal Pradesh University Business School, Summer Hill, Shimla.

Introduction

The success of an organization depends largely on the quantity and quality of its human resources. No organization can be successful in the long run without proper procurement of the right kind and right number of personnel. In the rapid changing business world, the competitive advantage can be gained only when knowledge is rationally integrated and aligned with business goals. The people-intensive industries like information technology, banking and financial services, manufacturing and retail, etc., are strongly competing for the acquisition of the cream talent. As a result other organizations are facing the severe problem of retaining their existing skilled and employable talent. Retaining the best employees is a challenge for many companies today, where low job-loyalty has led to high rate of employee turnover. Money has become a major motivator as reflected in career mobility, particularly at middle and lower levels.

The Satluj Jal Vidut Nigam Limited (henceforth referred as SJVNL) a Mini Ratna Schedule "A" public sector undertaking was earlier known as Nathpa Jhakri Power Corporation Limited (NJPC Ltd). It was incorporated on May 24, 1988 as a joint venture of the Government of India and the Government of Himachal Pradesh to plan and execute the Hydro-electric power projects in the river Satluj basin in the State of Himachal Pradesh and at any other place. The Nathpa Jhakri Hydro-electric Power Project (1,500 MW) which is the largest underground Hydro-electric power project in the country, was the first project undertaken by SJVNL for execution.

After successful commissioning of this largest hydel power station in Himachal Pradesh, at present a number of projects in the States of Himachal Pradesh and Uttaranchal, are in progress of execution, mainly Rampur

Hydro-Electric Power Project (412 MW) and Luhri Hydroelectric Power Project (775 MW), both in the river Satluj basin in the State of Himachal Pradesh, Dhaula Sidh Hydro-electric Power Project (66 MW) located in District Hamirpur of Himachal Pradesh and Devsari Dam Hydro-electric Power Project (300 MW) on river Pindar, Naitwar Mori Hydro-electric Power Project (33 MW) on river Tons (a tributary of River Yamuna), Jakhol Sankri Hydro-electric Power Project (33 MW) on river Supin, located in the State of Uttaranchal have been taken up for the preparation of DPR and subsequent execution.

SJVNL believes the employees are its most valuable assets and has evolved growth oriented human resource development strategy. Empowerment of manpower skills through training receives utmost importance every time. The organization has well-established strategy for imparting training to the employees. The corporation has established a Hydel Training Institute (HTI) situated at Kotla near Nathpa Jhakri Hydro-electric Project in order to cater the training requirements of its employees. Training imparted is two dimensional, that is, in-house training and through external professional institutions as well. The organization also facilitates the professional candidates of various institutions for undergoing vocational training in the organization. The objectives of SJVNL is creating work culture and work environment conducive to the growth and development of both, the organization and the individuals through democratic management, achieving constructive cooperation and building personal relations with stakeholders, peers, and other related organizations. The focus of the present study is on the talent management strategies followed by the corporation.

The Study

The mission of SJVNL is to plan, investigate, organize, execute, operate, and maintain hydro-power projects in the Satluj river basin in Himachal Pradesh and at any other place. It is committed to continuously strive for quality and satisfying customer needs by excellence in engineering and quality management for generating reliable and eco-friendly power. Keeping in view the strategic importance of this power sector to the State and the nation, it require more attention to create work culture and work environment conducive to the growth and development of organization and individual both through the implementation of effective manpower planning and development strategies especially in recent times, when the retention of best employees has become incredible challenge for organizations and the high exit rates have generally worsen the organizational effectiveness.

SJVNL, strategically a very important power sector, which employs about 2,000 employees, may be facing the dearth of talent due to exit–quits among best performers for better job opportunities elsewhere. The significance of the present study arises from this strategic importance of this corporation which it enjoys in the development of the state and nation both. A little disruption in the work and performance of this corporation leads to enormous losses. This compels one to understand, what strategies the SJVNL is executing in order to improve the talent management system. Keeping this fact in mind, the present study was conducted in order to analyze the existing talent acquisition and retention strategies followed by the corporation under study.

Objectives

The present study has been conducted with following objectives:

- To study the existing pattern of manpower planning and development followed by SJVNL
- To analyze the viewpoints of employees toward policies and procedures followed by SJVNL for acquisition of talented manpower
- To analyze the attitude of employees toward the retention strategies initiated by the SJVNL for talented manpower

Methodology

The present study was conducted with the objectives of analyzing the attitude of employees toward the existing strategies followed by SJVNL for the acquisition and retention of talented manpower in the corporation. Both primary and secondary data were used in order to conduct the study. The primary data was collected through a well-designed questionnaire from the sample of respondents. The secondary data was collected through a published material of the organization by personally visiting the different offices. The sample of respondents comprises managerial, technocrats and ministerial personnel.

The study being a case study deals with the need of talent acquisition and retention as the main aspects of manpower planning and development. SJNVL employs about 2,000 employees and it was not possible to make use of census method of investigation. Hence, we made use of sampling method of investigation. For the purpose of this study the sample of the respondents constitute 60 employees, which were chosen with the help of random sampling technique. Although there are different methods

of selecting the sampling units, but we have used the lottery method for the selection of sample units. All categories of employees, mainly managerial, technocrats, and ministerial personnel were assured with the representation in the sample in order to construe it as representative sample. In order to get the required information, the questionnaire was administrated among the respondents. The information thus collected has been analyzed with the help of various statistical tools and techniques. Through the Likert Type Scale the score was calculated, with the help of Weighted Average Score (WAS). For Strongly Agree (SA), five marks were allotted, four marks were allotted to Agree (A), three marks for Neutral (N), two for Disagree (D), and one for Strongly Disagree (SD).

Results and Discussion

Human Resource Acquisition Strategies

Human resource planning and recruitment: It is necessary for each organization to forecast the manpower requirements according to the expected future changes in the business environment. Thus, rational manpower management starts with proper manpower planning through which the decision makers resolve the strategies to move the organization from existing manpower position to desirable position. This process is influenced by the uncertainity, socioeconomic, political, and technological factors. Hence, planning of required human resources is very important and the organization needs to follow an adequate procedure of human resource planning before the selection of talented employees.

In SJVNL, advertisement, employment exchange placement agencies and campus placement are the sources of recruitment. Written test comprising of aptitude test and questions related to discipline, group discussion, and interview are the main steps in selection process. In order to know the attitude of respondents toward the manpower planning and recruitment policies of the corporation, the statements shown in Table 1 were addressed to them. Out of the total respondents, 22.33 percent of respondents strongly agreed and 53.33 percent agreed with the statement "There is adequate human resource planning before the selection of talented employee." The WAS for this statement was worked out to be 3.76. "The organization follows a proper recruitment procedure for the selection of new talented person" was expressed with the highest degree of faith for which the WAS was calculated 4.23 and 43.33 percent respondents strongly agreed with this statement, whereas only 6.67 percent of respondents have shown disagreement. Similarly, for the statements "Employees in general are

Table 1: Human Resource Planning and Recruitment

(n=60)

S. No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disgree	TWS	WAS
1.	The organization follows a proper recruitment procedure for the selection of new talented person.	26 (43.33)	26 (43.33)	04 (6.67)	04 (6.67)	-	254	4.23
2.	There is adequate human resource planning before the selection of talented employee.	14 (23.33)	32 (53.33)	-	14 (23.33)	-	226	3.76
3.	All the required stimulus and measures like better salary offer, bonus, job security, etc. are given for attracting the new talent.	16 (26.67)	12 (20.00)	12 (20.00)	14 (23.33)	06 (10.00)	198	3.30
4.	The incumbent with technical qualification need to be recruited through campus placement by SJVNL.	17 (28.33)	10 (16.67)	12 (20.00)	15 (25.00)	06 (10.00)	197	3.28
5.	In the emerging competitive world, there is an urgent need to change the recruitment policy in the SJVNL.	23 (38.33)	12 (20.00)	10 (16.67)	08 (13.33)	07 (11.67)	216	3.60
6.	Employees in general are satisfied with the recruitment policy followed by the SJVNL.	19 (31.67)	22 (36.67)	12 (20.00)	05 (08.33)	02 (03.33)	231	3.85

Note: Figures in parentheses shows percentages to the total number of respondents interviewed.

The Weighted Average Score (WAS) was calculated by giving scores as 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Neutral (N), 2 for Disagree (D) and 1 for Strongly Disagree (SD).

satisfied with the recruitment policy followed by the SJVNL" and "In the emerging competitive world, there is an urgent need to change the recruitment policy in the SJVNL," the majority of respondents expressed agreement towards these statements. The WAS for these statements was worked out as 3.85 and 3.60, respectively.

On the basis of this, it can be concluded that the corporation follows a proper human resource planning and recruitment procedure. However, the majority of employees have supported the opinion that the corporation need to change its existing recruitment procedure because of the emerging competition for the acquisition of talented employees (Table 1).

Selection procedure: The selection process consist of job analysis, job specifications, and conducting the interview. The corporation under study follows a proper method of selection of new employees. An adequate method of selection such as aptitude test, proficiency test, and interview is used in the organization. The selection process comprises the written test, group discussion, and personal interview. Merit of all these are the criteria of final selection. In the process of personal interview, the candidate is set at ease, so that he does not feel uncomfortable. The focus areas like candidate's background, behavior, stability, communication skills, etc., are properly checked. Candidate is put under complex situation and is looked for best solutions. Organizations put new employees under probation and during which training is imparted as an orientation program for new employees.

In order to know the selection procedure followed by the corporation, the respondents were asked to express their opinion on the different statements relating to the selection procedure, the information regarding which has been shown in Table 2. The majority of respondents (40 percent) strongly agreed with the statement "An adequate method of selection such as aptitude test, proficiency test and interview is used in the organization." The WAS for this statement was found maximum (4.16). With the statement "During the selection process of talented employee the skill requirements of employees is duly assessed through the observational techniques," the majority of respondents have expressed agreement (WAS =3.86). For the statement "Employees are satisfied with the selection procedure followed by the SJVNL" the majority of respondents (30 percent) expressed agreement, whereas 18.33 percent disagreed with this statement. The majority of respondents (70 percent) supported the statement, "During selection the main emphasis is given to the required talent of the candidate in-spite of the academic qualification." The WAS for this statement was worked out as 3.66.

Table 2: Selection Procedure

(n=60)

S. No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disgree	TWS	WAS
1.	An adequate method of selection such as aptitude test, proficiency test and interview is used in the organization.	24 (40.00)	22 (36.67)	14 (23.33)	-	-	250	4.16
2.	During selection the main emphasis is given to the required talent of the candidate in-spite of the academic qualification.	04 (06.67)	42 (70.00)	08 (13.00)	02 (03.33)	4 (06.67)	220	3.66
3.	The vacant post in the organization is generally filled up from internal sources like transfers and promotions of existing employees.	02 (03.33)	16 (26.67)	20 (33.33)	20 (33.33)	2 (03.33)	176	2.93
4.	During the selection process of talented employee the skill requirements of employees is duly assessed through the observational techniques.	16 (26.67)	30 (50.00)	04 (06.67)	10 (16.67)	-	232	3.86
5.	SJNVL need to initiate changes in the selection policy in order to meet the competitive environment.	21 (35.00)	20 (33.33)	09 (15.00)	05 (08.33)	05 (08.33)	227	3.78
6.	Employees are satisfied with the selection procedure followed by the SJVNL.	15 (25.00)	18 (30.00)	12 (20.00)	11 (18.33)	04 (06.67)	209	3.48

Note: Figures in parentheses shows percentages to the total number of respondents interviewed.
The Weighted Average Score (WAS) was calculated by giving scores as 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Neutral (N), 2 for Disagree (D) and 1 for Strongly Disagree (SD).

Hence, on the basis of this analysis, it can be inferred that the employees in general are satisfied with the recruitment procedure followed by the corporation. However, the selection process needs to be redesigned by the corporation in the wake of competitive environment, where the job seekers have variety of opportunities, if they possess the required talent (Table 2).

Human Resource Retention Strategies

Training and Development: In SJVNL, performance appraisal is the main criteria for assessing the training requirements of an employee. Head of the branch/ department identifies the training needs related to his/her discipline. Functional training needs are identified by head of the department. Individual training requirements are also identified by the head of the department and the organizational training needs are identified by the top management depending upon the organizational needs. There is a proper scheme of training, where the functional and developmental training needs are identified by sending the employees to professional institutes to update functional knowledge as well as personal development. There is also a training scheme for senior managers through which they are allowed to visit abroad in order to update their required skills. On-the-job training is given to the newly appointed candidates. Apart from this, there is a provision of orientation training and promotional training to the employees of the corporation.

The assessment of employees' opinion on the existing training and development policies of the corporation have been shown in Table 3. The table reveals that the majority of respondents (31.67 percent) strongly

Table 3: Training and Development

(n=60)

S. No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disgree	TWS	WAS
1.	More emphasis need to be given to the training needs of employees for the effective job performance.	22 (36.67)	24 (40.00)	04 (06.67)	08 (13.33)	02 (03.33)	236	3.93
2.	Organizational changes are leading to change in job profiles, internal mobility and technical progress consequently which requires the effective training.	10 (16.67)	26 (43.33)	14 (23.33)	06 (10.00)	04 (06.67)	212	3.53
3.	Evaluation of training methods are necessary in order to know the change in employees" performance.	10 (16.67)	36 (60.00)	04 (06.67)	08 (13.33)	02 (03.33)	224	3.73
4.	Feedback on training effectiveness is given to the employees after regular intervals.	10 (16.67)	28 (46.67)	10 (16.67)	12 (20.00)	-	216	3.60
5.	Proper "On-The-Job" training and retraining is imparted to the employees in the organization.	08 (13.33)	15 (25.55)	20 (33.33)	10 (16.67)	07 (11.67)	187	3.17
6.	Employee"s performance is evaluated after providing the necessary training by the organization.	09 (15.00)	18 (30.00)	15 (25.55)	11 (18.33)	07 (11.67)	191	3.18
7.	SJVNL need to take viable measures to retain the talented employees.	20 (33.33)	24 (40.00)	10 (16.67)	04 (06.67)	02 (03.33)	236	3.93
8.	The infrastructural facilities in order to provide training for the employees are well maintained in SJVNL.	12 (10.00)	15 (25.55)	15 (25.55)	10 (16.67)	08 (13.33)	193	3.22
9.	Training helps employees in promotion, improvement in performance in work and other monetary benefits in your organization.	19 (31.67)	24 (40.00)	13 (21.67)	09 (15.00)	05 (08.33)	253	4.22
10.	Employees are satisfied with the training policies and practices followed by the organization.	10 (16.67)	17 (28.33)	18 (30.00)	11 (18.33)	04 (06.67)	198	3.30

Note: Figures in parentheses shows percentages to the total number of respondents interviewed.
The Weighted Average Score (WAS) was calculated by giving scores as 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Neutral (N), 2 for Disagree (D) and 1 for Strongly Disagree (SD).

agreed with the statement "Training helps employees in promotion, improvement in performance in work and other monetary benefits in your organization" and 40 percent expressed agreement. The WAS for this statement was worked out to be 4.22. The statements "More emphasis need to be given to the training needs of employees for the effective job performance" and "SJVNL need to take viable measures to retain the talented employees" were also agreed by the majority of respondents. The WAS for both these statements was found same as 3.93. The majority of respondents have also expressed their agreement on the statements like "Evaluation of training methods are necessary in order to know the change in employees' performance" (WAS=3.73), "Feedback on training effectiveness is given to the employees after regular intervals" (WAS=3.60), "Employee's performance is evaluated after providing the necessary training by the organization" (WAS=3.18) and "Organizational changes are leading to change in job profiles, internal mobility and technical progress consequently which requires the effective training" (WAS=3.53). On the statements "Proper 'On-the-Job' training and retraining is imparted to the employees in the organization." "The infrastructural facilities in order to provide training for the employees are well-maintained in SJVNL" and "Employees are satisfied with the training policies and practices followed by the organization" the majority of respondents were found neutral. The WAS for these statements were found to be 3.17, 3.22, and 3.30, respectively.

Hence, it can be concluded that the organization needs to properly assess the importance of training for effective job performance. In order to motivate the employees toward his assignments and performance, it is necessary to upgrade the employee with the latest knowledge and skills. Overall development of an employee in response to the dynamic environment is necessary ingredient for improving his job performance.

Job Satisfaction: Job satisfaction is the composition of psychological, physiological, and environmental factors which determine the morale of an employee. The job satisfaction and morale are two very important aspects which affect the performance level of an employee. Therefore, it was necessary to ascertain whether the required level of job satisfaction and morale exist in SJVNL and if not, then what are its implications and how the required level can be achieved. The information regarding this has been presented in Table 4. The table shows that the majority of the respondents were found agreed with the statements "Employees in the organization are

Table 4: Job Satisfaction and morale

(n=60)

S. No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disgree	TWS	WAS
1.	Employees in the organization are completely satisfied from the nature of job they are being assigned.	14 (23.33)	32 (53.33)	04 (06.67)	10 (16.67)	-	230	3.83
2.	In the organization superiors and co-workers never give any feedback to the employee about their job performance.	02 (03.33)	16 (26.67)	24 (40.00)	12 (20.00)	06 (10.00)	176	2.90
3.	Job security and social security measures are duly recognized and implemented by the organization time to time.	08 (13.33)	40 (66.67)	06 (10.00)	06 (10.00)	-	230	3.83
4.	The employees are satisfied from the salary, compensation and fringe benefits provided by the organization.	10 (16.67)	28 (46.67)	06 (10.00)	08 (13.33)	08 (13.33)	204	3.40
5.	The employees feel a great sense of satisfaction when they perform the assigned job well in the organization.	18 (30.00)	21 (35.00)	10 (16.67)	06 (10.00)	05 (08.33)	221	3.68
6.	You remain in high state of morale and your job provide you the complete job satisfaction.	15 (25.00)	22 (36.37)	11 (18.33)	08 (13.33)	04 (06.67)	216	3.60

Note: Figures in parentheses shows percentages to the total number of respondents interviewed.
The Weighted Average Score (WAS) was calculated by giving scores as 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Neutral (N), 2 for Disagree (D) and 1 for Strongly Disagree (SD).

completely satisfied from the nature of job they are being assigned" and "Job security and social security measures are duly recognized and implemented by the organization time to time." The WAS for these statements were worked out 3.83 each. Out of the total number of respondents, 46.67 percent of the respondents were found to agree with the statement, "The employees are satisfied from the salary, compensation and fringe benefits provided by the organization," whereas 13.33 percent were found strongly disagreed with this statement. The WAS for this statement was 3.40. However, the majority of respondents were found neutral (40 percent) for the statement "In the organization superiors and co-workers never give any feedback to the employee about their job performance," the WAS for which was calculated as 2.90. While assessing the attitude of respondents toward job satisfaction and morale, it was found that the 25 percent of the respondents strongly agreed with the statement "You remain in high state of morale and your job provide you the complete job satisfaction" and the majority of 36.67 percent expressed their agreement with the statement, whereas 13.33 percent were found disagreed. The WAS for this statement was 3.60. Hence, it can be stated that the employees in general are satisfied from the nature of job and its security measures being provided to them by the corporation, which can be an effective measure in order to improve the performance of the employees and retaining the existing talent in the corporation.

Working Environment: The efficiency of the employees depends, to a great extent, on the environment in which they work. Work environment consists of all these factors which act and react on the body and mind of an employee. It should be the primary objective of an organization to create an environment, which ensures the greatest ease of work and removes all the causes of annoyance, anxiety, and worry. In the congenial working environment, the fatigue, monotony, and boredom are minimized and work performance shows the improvement.

The assessment of the working environment in SJVNL is presented in Table 5. The large number of respondents (72 percent) have shown agreement with the statement "Job changes like transfers, promotions, etc., are necessary in order to increase in productivity, effectiveness and job satisfaction of the employees," whereas only 6.67 percent expressed disagreement. The WAS was calculated as 3.96. Similarly, 66.67 percent of the respondents were found agreed with the statement "Employee welfare measures like housing, education, transportation, and recreation, etc., are provided by the organization as per industrial law," whereas only 10 percent were found disagreed. The WAS for this statement was worked out 3.76. The majority of the respondents have expressed their fair attitude towards the statements "Job changes like internal and external mobility of an employees improve their skills, labor relations and reduces boredom" (WAS=3.86) and "Good health and safety

Table 5: Working Environment

(n=60)

S. No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disgree	TWS	WAS
1.	Job changes like transfers, promotions, etc. are necessary in order to increase in productivity, effectiveness and job satisfaction of the employees.	10 (16.67)	42 (70.00)	04 (06.67)	04 (06.67)	-	238	3.96
2.	Job changes like internal and external mobility of an employee's improve their skills, labor relations and reduces boredom.	10 (16.67)	38 (63.33)	06 (10.00)	06 (10.00)	-	232	3.86
3.	Good health and safety measures like cleanliness, lighting, temperature, ventilation, freedom from noise etc. at workplace are provided by the organization.	16 (26.67)	28 (46.67)	06 (13.33)	02 (10.00)	- (03.33)	230	3.83
4.	Employee welfare measures like housing, education, transportation and recreation etc. are provided by the organization as per industrial law.	06 (10.00)	40 (66.67)	08 (13.33)	06 (10.00)	-	226	3.76

Note: Figures in parentheses shows percentages to the total number of respondents interviewed.
The Weighted Average Score (WAS) was calculated by giving scores as 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Neutral (N), 2 for Disagree (D) and 1 for Strongly Disagree (SD).

measures like cleanliness, lighting, temperature, ventilation, freedom from noise, etc., at workplace are provided by the organization" (WAS=3.83). On the basis of this information, it can be stated that the employees are satisfied with the working environment at SJVNL. Hence, it would positively effect the employees' acquisition and retention strategies of the corporation. If the corporation could sustain this working environment, it will attract more employable talent toward the corporation and this will also help the organization to retain the existing talent in the corporation for the longer period.

Performance appraisal and promotion: The main purpose of performance appraisal is to identify and meet the training needs of the employees. The performance of an employee working in an organization depends on his managerial wisdom, technical skill, and his potential effectiveness. A person working in an organization is evaluated through an appraisal system in order to ascertain his psychological needs, to provide a fair criterion for salary increases, promotion/demotion and transfer and other allied issues.

In SJVNL, performance appraisal is done by immediate boss and head of the department. It is done once in a year. It is used as a criterion for promotion, identifying the training needs, transfers and placements of employees. Method of performance appraisal is different for each category. For executives, it is done by M.B.O. (Management by objective). Targets are set, data relating to the performance of each individual toward the target is collected and key research areas of each employee are checked and evaluated. In case of junior officers and workers, personal traits and qualification traits are checked by immediate superior.

While assessing the attitude of employees toward the performance appraisal and promotion policies followed by the corporation (Table- 6), it was found that the majority of the respondents (30 percent) strongly agreed and 33.33 percent agreed with the statement, "The appraisal system is an instrument which helps to identify the training needs in the human resources department in your organization," the WAS for which was worked out 3.80. Similarly, 53.33 percent of the respondents expressed their agreement with the statement "Promotion is purely on the basis of seniority"

Table 6: Performance appraisal and promotion

(n=60)

S. No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disgree	TWS	WAS
1.	Employee is given due recognition for his/her improved performance and he/she is promoted purely on the basis of his/her best performance.	08 (13.33)	20 (33.33)	08 (13.33)	20 (33.33)	04 (06.67)	188	3.13
2.	Promotion is purely on the basis of seniority.	12 (20.00)	32 (53.33)	06 (10.00)	08 (13.33)	02 (03.33)	224	3.73
3.	There is an adequate performance management within the organization where the performance of the employee's on the present job and his potential for higher level job is assessed.	06 (10.00)	14 (23.33)	10 (16.67)	28 (46.67)	02 (03.33)	174	2.90
4.	Performance standards are established, reviewed, communicated, measured, compared, discussed with employees and corrective actions are taken in the organizations.	04 (06.67)	18 (30.00)	14 (23.33)	18 (30.00)	06 (10.00)	176	2.93
5.	The appraisal system followed by the organization provides a platform for self assessment and improvement of employee.	14 (23.33)	18 (30.00)	12 (20.00)	09 (15.00)	07 (11.67)	203	3.38
6.	The appraisal system in SJVNL is unbiased and based on objectivity.	10 (16.67)	15 (25.00)	20 (33.33)	11 (18.33)	04 (06.67)	196	3.27
7.	The appraisal system is an instrument which helps to identify the training needs in the Human Resources Department in your organization.	18 (30.00)	20 (33.33)	16 (26.67)	04 (06.67)	02 (03.33)	228	3.80

Note: Figures in parentheses shows percentages to the total number of respondents interviewed.
The Weighted Average Score (WAS) was calculated by giving scores as 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Neutral (N), 2 for Disagree (D) and 1 for Strongly Disagree (SD).

and only 13.33 percent expressed disagreement with the statement. The WAS for this statement was 3.73. On the other hand, the majority of the respondents (46.67 percent) expressed their disagreement with the statement, "There is an adequate performance management system within the organization where the performance of the employee's on the present job and his potential for higher level job is assessed," whereas 23.33 percent respond their agreement. The WAS for this statement was calculated as 2.90. For the statement "The appraisal system in SJVNL is unbiased and based on objectivity," the majority of the respondents (33.33 percent) was found unable to respond either way (WAS = 3.27).

Hence, on the basis of this analysis, it can be concluded that the appraisal system of the organization play a major role in determining the self assessment of an employee and training needs for its human resources. In SJVNL, it was found that there is not an adequate performance management system and the promotion of employees is solely on the basis of seniority.

Reward and Recognition: Rewards and due recognition play a very important role in motivation of employees. If the best performers are being recognized and rewarded regularly by the organization, it plays a very important role in boosting their morale and shaping their positive attitude and deep loyalty towards their organization. Keeping in view these facts, the attitude of the employees on the system of reward and recognition were assessed in SJVNL (Table- 7). The table makes it clear that the large majority of respondents (53.33 percent) were found agreed and the 25 percent strongly agreed with the statement, "The organization lacks incentives to promote the better performers," whereas only 6.67 percent respondents were disagreed. For the statement "Acquisition of skilled knowledge is duly recognized and rewarded in the organization," 30 percent of the respondents expressed agreement and the same percentage of the respondents were found disagreed and neutral respectively. The WAS for this statement was found 3.20. Hence, it can be inferred that the reward and recognition system is existing and working in the organization but, it is not that much effective wherein an employee can feel motivated. Similarly, the organization was not found generous to provide incentives to its best performing employees.

Conclusions and Implications

In a fast-changing world, where rapid growth is being witnessed all the time, the organizations are facing the challenges of creating various innovative human resource practices which can ensures the attraction and retention of existing talent. Human resources management strategies consists of a variety of tools, which can be applied for enriching the human resources in order to attain the optimal level of efficiency and also to assist the organization to retain the best available talent. It includes the career development, reward and recognition, employee engagement mechanism, training and development, performance evaluation, and an attractive and energized work environment having strong culture throughout the organization. The organizations need to apply these tools and techniques in order to acquire and retain the best talent available. Those organizations who would not respond to the changing environmental needs for innovative talent acquisition and management strategies are bound to be in immense pressure in the future. Therefore, in order to attract and retain the best talent, the organizations need to initiate different and dynamic employee engagement activities and

Table 7: Reward and Recognition

(n=60)

S. No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disgree	TWS	WAS
1.	Acquisition of skilled knowledge is duly recognized and rewarded in the organization.	06 (10.00)	18 (30.00)	18 (30.00)	18 (30.00)	--	192	3.20
2.	Designing of the reward and compensation system is transparent and employees are a part of decision making process for rewarding the employees.	08 (13.33)	30 (50.00)	10 (16.67)	12 (20.00)	--	214	3.56
3.	The organization lacks incentives to promote the better performers.	15 (25.00)	32 (53.33)	10 (16.67)	04 (06.67)	02 (03.33)	220	3.60

Note: Figures in parentheses shows percentages to the total number of respondents interviewed.
The Weighted Average Score (WAS) was calculated by giving scores as 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Neutral (N), 2 for Disagree (D) and 1 for Strongly Disagree (SD).

to be pro-active to the environmental changes.

In the present study through its empirical evidence, it was established that the existing organizational environment in SJVNL, where balanced care has been paid to human component, the employees were not found disappointed. In the corporation, there is a Human Resource Department staffed with qualified and professional experts, who have implemented different human resource development strategies with zeal and vigor. But these can not be easily matched with private sector organizations. The respondents were found satisfied to some extent so far as the application of human resource development techniques is concerned. It was found that the organization follows a proper recruitment and selection procedure. However, in response to the economic recession where competition has gone global, ideas and techniques are developing quickly and people are often changing jobs which have resulted to the dearth of employable talent, the organizations have to redesign their recruitment and selection policies.

In SJVNL, which mostly acquire technocrats, the interview and the selection process need to expand its base. A candidate appearing for engineering job must be tested for his professional competence by exposing him to different technical problems which he is likely to face in the organization. This procedure of interview will ensure the acquisition of only those talented people, who possess a very high degree of professional competence rather than those who are only conceptually strong.

The majority of the respondents pointed out that the training is an important ingredient in order to create, grow, and sustain effective and successful leader and managers. Both categories of respondents, that is, the technocrats and ministerial employees expressed that training helps employee for improvement in his performance. Hence, the corporations need to give more emphasis on identifying the training requirements of the employees. There is a need to enhance the training infrastructure especially by creating one more training institute within the organization equipped with the permanent faculty members to manage the training programmes and to cater the training needs of the employees, which is based upon the latest knowledge and technology. In order to ensure adequate job satisfaction, the performance evaluation and promotion criteria need to be integrated because promotion based on merit and performance is always a great motivating factor.

The organizations which are embodied with well-defined corporate values, especially which comprises non-monetary measures like career development, healthy working environment, reward and recognition would be proved successful in order to retain the best talent available. In SJVNL, the employees were found satisfied with the existing working environment of the corporation, however, the majority of the respondents pointed out that the organization lacks incentives to promote the best performer. Hence, the organizations need to develop a mechanism where recognition and reward for the best performer can be ensured, so that the motivational level and loyalty of the talent can be maintained, if not improved.

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The greatest barrier to success is the fear of failure.

— Sven Goran Eriksson

Focus

Organizational Excellence through Role Efficacy: An HRD Intervention

Anirudh Pandey and Amit Pandey

In order to enhance organizational excellence with pleasantness of role incumbents, an HRD intervention of one day's duration was conducted by 2 HR specialists on 32 junior engineers undergoing induction training in an electric training institute. Role Efficacy Scale was used to measure perception of role. Approximately 50 percent of individuals were found to have perceptual distortions through macro analysis of REQ. Micro analysis showed majority of the participants (55 percent to 85 percent) having adequate perception in regard to Confrontation, Integration, Helping relations, and Growth and a sizeable number (40 to 70 percent) having major inadequacy in regard to Super ordination, Pro activity, and Influence. Reasons behind the deficiencies and action suggestions were generated through group discussion during the intervention. Participants made action plans to overcome their inadequacies in the dimensions specific to them and bring excellence in organizational performance.

Anirudh Pandey is a visiting faculty of management in Lucknow University and Amit Pandey is working in the insurance sector.

Introduction

Role efficacy as a framework for understanding the interaction of individuals with their roles and resultant outcomes has generated greater interest in the last three decades (Pandey and Saxena, 2010; Sayeed and Pareek, 2000). It is defined as perception of abundance of opportunities on the job. It is not a new concept as far as our Indian culture is concerned. Here, work is taken to be worship. It has been broadly elaborated in our old scripture Bhagwat Geeta, where one has to stand to role demand like Arjuna who had to fight with his own blood relations in order to fulfill the demand of the role with pleasure and saw greater opportunity even in killing his blood relations for standing to the demand of his role. In Ramayana, human life has been shown as a great opportunity to perform one's roles with devotion and dedication. In managerial context, however, this concept was proposed by Pareek (1980,1986, and 1993).

Researches carried out on its correlates with personal and organizational variables have abundantly established its utility as a concept. It helps managers to make interventions in the organizational systems (Pestonjee and Pandey, 1996; Pandey and Saxena, 2010) to evaluate their efforts toward role development programs. The overall effects of such individual- and organization-level interventions has been found instrumental in development of commitment of organizational members to organizations, increasing productivity and changing image of the organizations.

Role efficacy from its inception till date has been widely used by trainers and OD specialists as a training tool. Very little effort has been made to use it as a paradigm for action and as a means of metamorphosis of personal and organizational behavior. Pandey (1992, 1993, 1996,

1998, and 2002) has continuously used it as a tool of transformation of behavior at the various levels of the jobs in the organizations.

Junior engineers in the power sector play a pivotal role in their organizations. All the work is generated at this level. They are the link pins between the workers and management. They have to assign jobs to the workers, explain the procedure, take the feedback about learning of the procedure, monitor the performance and get the job done within the targeted time frame. They have to report the minute-to-minute update report to their immediate bosses. In addition, they have to represent the department to the public. In recent years, rapid technological advances in machines and their operations, growing education levels of workers, reservation policy for promotions for certain groups of workers based on government policies has complicated the job of junior engineers. The situation is further compounded by general apathetic attitude of workers toward work, lack of power to deal with the workers, and availability of abundance of opportunities for employment to the junior engineers in the open market in multinational companies. In such a scenario, how a role incumbent at the entry level perceives his job, becomes a matter of concern not only to their organization but also to the general public, industry and the nation. If an HRD intervention is not taken, they are likely to perceive their jobs negatively which is likely to be reflected in bad performance at the job. This may invite discomfort to public and damage to industry.

In order to bring organizational excellence with their participation, it is necessary to understand the perceptions of the role by junior engineers at the entry level. To meet this need, an HRD intervention was conducted on "Perceptions of the Role by Junior Engineers at the Entry Level." The study aimed to diagnose the ailing elements/ dimensions of perception; identify strong areas of role perception and prognoses/suggest remedial measures at the macro/micro levels HRM in reference to specific demographic variables.

HRD Workshop

Thirty two (32) junior engineers of power sector undergoing induction training at an electric training institute served as participants for the workshop. All of them except one female participant were males. They ranged between 20 and 40 years of age with a mean of 27 years. In regard to education, all had diploma in engineering except one who had BTech degree in engineering. In regard to experience, 24 of them were freshers from the college and were undergoing induction training and had no exposure to actual job. Eight of them, however, were promoted from lower ranks and had experience between 1 and 12 years.

The workshop was conducted by two HR specialists. It was of a day's duration and had four sessions. The first session was devoted to micro lab and conceptual frame work of role perception. The objectives of the workshop and its relevance for them was explained. In the second session, role efficacy scale (RES) was administered on the subjects in a class room setting in psychologically approved manner and as explained by the author. The participants were asked to check if they have omitted any item to respond. After they confirmed of having responded to all items, scoring procedure to evaluate the responses was explained and the subjects were asked to: self evaluate their responses, classify the responses in the ten dimensions of role efficacy (centrality, integration, pro activity, creativity, inter role linkage, helping relations, super ordination, influence, growth, and confrontation), total the ten scores and calculate their role efficacy quotient (REQ) strictly according to Pareek (1986).

It is worth mentioning that the scale had 20 items in all and each dimension of RES had two items. Each item had three (triad) statements. The respondent was to select one statement from the triad which reflected his true feeling accurately. Each of the three statements was power weighted. A score of +2 was assigned to positive statements, +1 was assigned to useful statements, and –1was assigned to negative statements. On each dimension, a respondent could get a maximum score of 4 and a minimum score of –2. Thus, by totaling the scores on the ten dimensions of the scale, a respondent could get a maximum score of 40 and a minimum score of –20. REQ was calculated by the formula: total score plus 20 divided by 60 and multiplied by 100. Thus, REQ could range between 1 and 100. The scale is reported to have sufficient psychometric property.

The subjects were taken in confidence that their responses will not be disclosed to their department or to any other person. They were reminded of the objectives of the workshop aimed at enhancing organizational excellence by enhancing their personal efficacy with pleasantness both at home and the job.

Results

Audit of inadequacies in various dimensions: distribution percentages of the role by the role incumbents along with

individual scores of 4, 3, 2, 1, and below are represented in Table 1.

Table 1: Distribution percentage along with scores of 4, 3, 2, 1 and below on ten dimensions

Dimensions	4	3	2	1	Below
1. Centrality	20	45	25	5	5
2. Integration	70	20	10	0	0
3. Pro-activity	15	25	30	15	15
4. Creativity	25	45	15	10	5
5. Inter-role linkage	20	50	15	15	0
6. Helping relation	60	20	5	10	5
7. Super-ordination	10	20	30	20	20
8. Influence	10	50	15	15	10
9. Growth	55	25	5	5	10
10. Confrontation	85	15	0	0	0

It can be recalled that 4 is the highest score on each of the 10 dimensions. In view of this, persons having scored 4 on any dimension are supposed to have adequate positive perception on that dimension. On the same lines, persons having scored 3, are supposed to have 75 percent adequacy and 25 percent inadequacy/deficiency; those scoring 2 are supposed to have 50 percent adequacy and 50 percent deficiency; those scoring 1 are supposed to have 25 percent adequacy and 75 percent deficiency and those scoring below 1, i.e., 0 or –1 are supposed to have 0 or –25 percent deficiency. In the present scenario of cut-throat competition, an organization cannot survive even with 25 percent deficiency what to talk of 0 and –25 percent deficiency. Therefore, there is a need to extend the benefit of intervention to all the role incumbents at all levels even with slightest degree of deficiency.

Macro Analysis

In order to present an overall quantitative picture/macro analysis of perception of role by the participants, REQ was calculated in respect of each participant. It ranged between 40 and 97 percent. For convenience of analysis, we formed three categories of these REQs and divided the subjects into these categories as shown below,

Category:		percentage of participants	REQ Position
S. No.1.	A	50 percent	REQ 80 and above
S. No.2.	B	34 percent	REQ 70 to 79
S. No.3	C	16 percent	69 and below

It can be seen that even if we make compromise to bear with 20 percent deficiency in role perception of the participants, 50 percent of them require immediate attention.

Micro Analysis

In order to present an overall quantitative picture/micro analysis of the perception of role on the 10 dimensions of RES, three qualitative categories were formed. The rating score of 4 was named as Adequacy, rating score of 3 was named as Mild inadequacy and rating score of 2 or below as Major inadequacy. Percents of subjects along three qualitative categories are shown in Table 2.

Table 2: Distribution percentages of participants along three qualitative categories

Dimension	Adequacy	Mild Inadequacy	Major Inadequacy
a) Centrality	20	45	35
b) Integration	70	20	10
c) Pro-activity	15	25	60
d) Creativity	25	45	30
e) Inter-role linkage	20	50	30
f) Helping relation	60	20	20
g) Super-ordination	10	20	70
h) Influence	10	50	40
i) Growth	55	25	20
j) Confrontation	85	15	0

It can be noticed from Table 2 that the highest percentage (85 percent) of participants were found to have perceived adequacy in regard to the dimension of Confrontation, followed by 70 percent with Integration and by 60 percent with Helping Relations. The lowest percentage (10 percent) of participants had adequacy with the dimensions of Influence and Super-ordination, 15 percent with Proactivity, 20 percent with Inter-role linkage and Centrality, and 25 percent with Creativity. 55 percent of the participants had adequacy with Growth.

With regard to mild inadequacy, the percentages ranged between 15 percent and 50 percent. It can be observed from Table 2 that the highest percentage, that is, 50 percent of the subjects had mild inadequacy in regard to the dimension of Influence, followed by 45 percent in Centrality and Creativity, followed by 25 percent in Growth and Pro-activity. Percentage of subjects having mild

inadequacy in regard to Integration, Helping relations and Super-ordination was 20 percent. The lowest percentage, that is, 15 percent was found in the dimension of Confrontation.

When we look at the percentages of subjects having major inadequacies with regard to various dimensions and requiring immediate attention, it comes to light that the highest percentage, that is, 70 percent of subjects were found having major inadequacy in regard to Super-ordination. It was followed by 60 percent in Pro activity and 45 percent in Influence, 35 percent in Centrality, 20 percent both in Growth and Helping relations and 10 percent in Integration. No participant was found having major inadequacy in regard to Confrontation.

Discussion

The highest percentage of 85 percent of participants having adequacy in the dimension of Confrontation, 15 percent having mild inadequacy and no one having any major inadequacy is attributable to no exposure to actual job to 75 percent of the participants, their age structure ranging between 20 and 40 years with a mean of 27 years and possession of adequate educational/technical qualification by all of them.

The second highest percentage of 70 percent of participants having adequacy in the dimension of Integration indicates toward successful conduct of their probationer's training which might have created a need in them to utilize their knowledge, skill and experience in the job they have to join. However, 10 percent of them having major inadequacy in this dimension points toward an urgent need of HR intervention which was taken care of through this workshop. Our arguments put forth above are supported by an earlier study (Pandey, 1995) where highest percentage of the participants had adequacy in Integration and the second highest percentage of subjects had adequacy in Confrontation.

The third and the fourth highest percentages 60 percent and 55 percent being in favor of helping relations and growth in the lowest percentages indicates that there was harmonious relationship among the trainees and that adequate learning opportunities were given to them by trainers. The lowest percentage of 10 percent in regard to adequacy on super ordination and influence indicates need for more attention during this training.15 percent of the participants having adequacy in regard to pro activity is attributed to routine manner adopted in conduct of the training. Similarly, 20 percent of the participants having adequacy in inter role linkage is attributed to no exposure to actual job.

As regards identification of dimensions of major inadequacies, the fact that 70 percent of the participants had major inadequacy in the dimension of super ordination, 60 percent had major inadequacy in the dimension of Pro-activity and 40 percent of them had major inadequacy in the dimension of Influence, indicates possibility of non partnership of HR professional in the design and planning of training where as HR has become a strategic partner in every function of business. These results should be an eye opener for training institutes for involving HR personnel in design and planning of training programs. Percentages of participants having major inadequacy in the dimensions of Centrality being 35 percent in regard to Inter role linkage being 30 percent ,in regard to Helping relations and Growth being 20 percent and in regard to Integration being 10 percent were taken care through experiential learning given to participants through group discussion.

In view of the above discussions, it can be concluded that:

1. Approximately 50 percent of the supervisors require HR intervention to realize their role adequately.
2. Majority of them (55 percent to 85 percent) have adequate perception in regard to the dimensions of Confrontation, Integration, Helping relations and Growth which is required of every organizational member for survival and success of an organization in face of global competition.
3. A sizeable percentage of role incumbents (40 percent to 70 percent) have major inadequacy in the dimensions of Super-ordination, Pro-activity and Influence. It places an urgent demand on the organizations to embark upon HR interventions in general and role efficacy intervention in particular to overcome these weaknesses.
4. In view of 21st century being called the century for leadership development, all organizational members are to be awakened to unleash their potentials to the job and bring about an impact on their customers.

According to Professor Pareek (2008, p. 582), the past millennium has seen great leaders. By contrast, we are now in a century of great leadership. We need leaders in large number at all levels in all organizations. In such interventions, we have to develop in them leadership in their specific roles with internality, creativity, humility, values and networking. If these qualities are inculcated in them,

they are likely to be automatically pro-active and to realize the super ordinate value of their role and are likely to contribute excellently in the larger interest of the organization and to their corporate social responsibility.

Implications

This article is based on the interpretation of data collected through an HRD workshop on a small sample of 32 junior engineers who were undergoing induction training. Nevertheless, the results of this study brings to focus a need for conducting such interventions at all levels of the organizations if they want to survive and succeed in the present scenario of global competition. More over, this paper can serve as a guideline for initiating HR interventions to enhance organizational excellence through pleasantness of people at work It is likely to enhance quality in human relations work life balance, supervisor-sub ordinate relations as also a change in organizations' orientations from outward looking to inward looking.

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Success is not the Key to happiness. Happiness is the Key to Success. If you love what you are doing. You will be Successful.

— Herman Cain

Feature

Provider Satisfaction in Public Hospitals in Maharashtra

R. Nagarajan and Sanjeevanee Mulay

Studies on provider satisfaction in the delivery of health care are limited compared to the vast amount of literature available on client satisfaction. The present study tries to understand the perspective of the providers in delivering the health care services from the data collected from 407 providers in the public hospitals in Maharashtra. The study assesses the satisfaction of the providers under four major dimensions (work environment, work relationship, professional satisfaction and personal gains and losses), which covers fairly the different aspects related to their job satisfaction. The findings of the study reveal the important aspects of the provider satisfaction that need to be taken into account to improve the delivery of public health care.

R. Nagarajan and Sanjeevanee Mulay work at Population Research Centre, Gokhale Institute of Politics and Economics, Pune, India.

Introduction

Increasing the quality of health care in public health programmes is emerging as an important objective in recent years. Given the apparent low utilisation of public health care facilities in many less developed countries (World Bank, 1993), the information on quality of health care and the relative satisfaction of clients/patients and providers would be more useful to monitor the efficiency of the programme. In recent years, quality of health care, a client-centred approach to provide good quality health care, has emerged as a critical element of public health programmes in developing countries. However, the focus on clients (patients) not only involves clients who come to a health facility to receive services, but also addresses the work-related needs of personnel (providers) involved in the delivery of health care. Providers are health workers who work at various levels of the health care hierarchy, such as managers, doctors, nurses, technicians, clerks, and the lower level employees of the system. Providers derive greater personal and professional satisfaction from their jobs when they can offer good-quality care and can feel their work is valuable (WHO, 1998). Similarly, a higher client satisfaction also leads to a "job satisfaction" of the provider. Clearly, the health outcome in a community depends on satisfaction of both clients and providers. Although providers are important component of the health care service provision, their perspectives have received little attention compared to the clients' perspectives. In order to have a successful programme that serves clients well, we need a better understanding of the perspectives of the providers. Providers' workload, infrastructure available to them, patient flow, their working environment, their needs, motivations, personal gains and losses are the important dimensions in the provision of the services.

Various factors can affect the providers' ability to deliver quality health services. Common factors are:

changes in the health care system, strengths or deficiencies within systems or individual facilities, availability and of supplies and equipment, regulatory constraints, and providers' level of competence, medical school they attended and their personal values (Paine et al. 1998). In a study in Uttar Pradesh, the medical officers (doctors) pointed out that the inadequacies in the clinic infrastructure such as clinic equipment, supplies, and medicines affect their performance (Khan et al. 1995). Providers also often complain about poorly equipped facilities, long working hours, low salary, and little recognition (Mavalankar, 1999). As mentioned above, salaries and incentives; equipment, medicines and supplies; management and supervision; and staff training and development are important issues for the provision of better quality of care. Even the most conscious employees cannot do a good job if the systems they depend on are deficient – for example, if employees lack training, equipment, supervision, or a clear idea of their responsibilities (Kols and Sherman, 1998).

Providers generally focus on technical competence, effectiveness, and safety in the provision of health care. Quality Assurance Project (2003) lists the following key questions for providers: How many patients are providers expected to see per hour?; What laboratory services are available to them, and how accurate, efficient, and reliable are they?; What referral systems are in place when specialty services or higher technologies are needed?; Are the physical working conditions adequate and sanitary, ensuring the privacy of patients and a professional environment?; Does the pharmacy have a reliable supply of all the needed medicines?; and Are there opportunities for continuing medical education?

Public health facilities in India are generally criticised for their underutilisation, low quality of service, irregular attendance of medical staff, inadequate equipment, higher inefficiency, and poor maintenance and upkeep. In its recent publication, World Bank observes that " .....(in India) regardless of the type of provider, quality assurance is a problem, with most care reflecting poor clinical practices and standards and inadequate staffing" (Peters et al 2002). In 1990s, two national level household surveys on health related issues, NSSO 52nd Round (NSSO, 1998) and NFHS-2 (IIPS and ORC Macro, 2000), have collected some information on utilisation of public and private health facilities and client satisfaction. Both the studies reveal that the patient satisfaction is better in private health sector than in public health sector. This difference explains the reason for higher utilisation of private health facilities than the public facilities for curative services.

Studies on provider perspectives in the delivery of health care are limited compared to the vast amount of literature available on client perspective/satisfaction. In this context the present study tries to understand the perspective of the providers in delivering the health care services from the data collected from 407 providers in the public hospitals in Maharashtra. The current study forms the part of a larger study undertaken by the authors covering both patient and provider satisfaction under the World Bank funded Maharashtra Health Systems Development Project (Mulay and Nagarajan, 2004).

Table 1: Hospitals selected for the study by health circle, type of hospital and number of beds.

Health Circle	Type of Hospital			
	District Hospital (beds)	Sub-Divisional Hospital (100 bedded)	Sub-Divisional Hospital (100 bedded)	Rural Hospital (30 bedded)
Thane	Ratnagiri (186)	—	Dapoli	Wada
Nasik	Jalgaon (306)	Chopada	Chandwad	Sakri
Pune	—	—	IndapurKarmala	Sangola
Kolhapur	—	SawantwadiKankavali	—	Atpadi
Latur	Beed (320)	Parli Vaijnath	—	Majalgoan
Aurangabad	Jalna (115)	—	Ambad	Mantha
Akola	Buldhana (306)	Murtizapur	Dharni	Akot
Nagpur	Bhandara (384)	TumsarBGW Gondia	Mul	Rajura
Total	6	7	7	8

Note: All the hospitals under SDH-100, SDH-50 and 30 bedded rural hospitals are considered as Other Hospitals (OH) for the analysis. Figures in parentheses are bed strengths of the District Hospitals (DH).

Study Design

The state government has implemented the Maharashtra Health Systems Development Project (MHSDP) with the financial grant from the World Bank to strengthen the government hospitals by providing hardware and software facilities in selected hospitals during 1999-2005. Government of Maharashtra has divided the state into eight health circles for administrative purposes. Twenty-eight hospitals, which were under the MHSDP, were selected for the study from these eight circles (Table 1). The selected hospitals also represents four layers of government hospitals namely, (i) district hospitals, (ii) 100 bedded sub divisional hospitals, (iii) 50 bedded sub divisional hospitals, and (iv) 30 bedded rural hospitals. Thus, six non-teaching district hospitals (bed strength more than 115), 14 sub divisional hospitals and 8 rural hospitals were selected for the study. Only non-teaching district hospitals under the MHSDP were selected for the study. The fieldwork for the study was carried out in 2003.

Providers

In order to ascertain the perception of the providers and their satisfaction, we have interviewed 131 doctors, 115 nurses, 78 technicians, 26 pharmacists, and 57 Class-IV employees of the hospitals. In all, 407 providers were interviewed for the study. Table 2 gives the break-up of providers interviewed for the study in District Hospitals (DH) and Other Hospitals (OH: 100 bedded and 50 bedded SDHs and 30 bedded rural hospitals). We have mainly interviewed the senior doctors and nurses for the study. We thought that being in the government service for long-time, senior providers can assess the system in a better way and express their views without any reservation than the junior providers. The survey results are discussed separately for each category of providers by type of hospital.

Table 2: Number of providers interviewed for the study

Type of provider	Type of Hospital		
	District Hospital	Other Hospital	All Hospitals
Doctors	71	60	131
Nurses	51	64	115
Technicians	21	57	78
Pharmacists	6	20	26
Class-IV	19	38	57
Total	168	238	407

Provider Satisfaction: Doctors

We assess the satisfaction of providers under four major dimensions, which covers fairly the different aspects related to their job satisfaction. These are: (i) work environment; (ii) work relationship; (iii) professional satisfaction; and (iv) personal gains and losses. Before assessing the satisfaction level of the providers we give below a brief profile of the doctors, their reasons for choosing the government service and their opinion about the public hospitals.

Profile of Doctors

Generally more experienced doctors are posted in DHs. Doctors in DHs are older than their counterparts in OHs (Table 3). The mean age of the doctors in DHs and OHs is 43 years and 38.7 years respectively. Similarly, half of the doctors in DHs are Class-I officers whereas only one third of the doctors in OHs are Class-I medical officers. In India, generally, public service is less preferred by the female doctors due to transferable nature of job and long working hours (like emergency call, on call duty, round the clock need etc.). Only 17 percent of the doctors in our sample are females. More are less similar pattern is observed for both OHs and DHs. Twenty-nine percent of the doctors are from Scheduled Caste (SC) and Scheduled Tribe (ST) categories.

Table 3: Brief profile of the doctors interviewed for the study

Profile of doctors	DH	OH	Total
Mean age	43.0	38.7	—
Percent male	85.9	80.0	83.2
Percent female	14.1	20.0	16.8
Percent married	95.8	81.7	89.3
Percent SC & ST	28.2	30.0	29.0
Medical Officer – Class-I (%)	52.1	33.3	43.5
Medical Officer – Class-II (%)	47.9	66.7	56.5
Number of doctors	71	60	131

Reasons for Coming to the Government Services

We have started with asking the doctors about the reasons for coming to the government services. Many doctors gave more than one reason (Table 4). Among the reasons given, job security (47 percent), regular income (24 percent) and retirement benefits (19 percent) are related to monetary/ personal benefits and security in the job. It makes clear that the monetary benefits coupled with the job security were the major reasons for choosing the government

services by the doctors. Opportunity to serve people was an answer given by majority of the doctors (71 percent). Difficulty in establishing private practice and risk associated with the private practice have made 19 percent of the doctors to choose government services. Leave benefits and fixed timings together made ten percent of the doctors to choose government service. The personal benefits outweigh the other reasons as for as reasons for joining government service is concerned.

Table 4: Reasons for coming to the government services

Reason for coming to the government services (%)	DH	OH	Total
Job security	35.2	60.0	46.6
Regular income	19.7	28.3	23.7
Retirement benefits	8.5	31.7	19.1
Leave benefits	2.8	10.0	6.1
Opportunity to serve people	62.0	83.3	71.2
Establishing private practice is difficult	5.6	18.3	11.5
Private practice risky	5.6	8.3	6.9
Fixed timings	5.6	5.0	5.3
Other reasons	19.1	8.3	11.5
Number of doctors	71	60	131

Opinion of Doctors about the Public Hospitals

Quality of care is associated with the infrastructure available to the doctors, adequacy of medical personnel, better management of the public health programme, regular/ adequate supply of medicines, better provider satisfaction etc.. To understand the functioning of the government hospitals we have asked the doctors to give their opinion about the government hospitals (Table 5). Since they are the 'internal clients' of the system, their opinion will reflect the functioning of the system in a better way.

Only five percent of the doctors said that there is no lacuna in the government hospitals and the remaining 95 percent of doctors listed many problems, which are directly related to patient and provider satisfaction. Shortage of equipment, medicines, funds and staffs are reported by 37 to 45 percent of the doctors and lack of diagnostic facilities is reported by one fourth of the doctors. It means that the doctors are working under the system with lot of inadequacies to fully satisfy the patients. The problems which are directly related to the doctors like inadequate salary, heavy workload, pressure of seniors, too many restrictions are given by 13 to 18 percent of the doctors. Improper location of the government hospitals is given by 23 percent of doctors. The biggest problem of government hospitals given by the doctors is political interference as half of the doctors cited this reason.

Table 5: Opinion of doctors about the public hospitals

Opinion of doctors about government hospitals (%)	DH	OH	Total
No lacunae	1.4	8.3	4.6
Staff shortage	25.4	50.0	36.6
Medicine shortage	40.8	40.0	40.5
Shortage of funds	35.2	45.0	39.7
Shortage of equipment	36.6	55.0	45.0
Lack of facilities (lab, x-ray, BB. etc.)	16.9	31.7	23.7
Political interference	35.2	68.3	50.4
Improper location	15.5	31.7	22.9
Payment inadequate	16.9	20.0	18.3
Heavy workload	11.3	25.0	17.6
Pressure of superiors	11.3	20.0	15.3
Too many restrictions	8.5	18.3	13.0
Lack of cooperation from staff	2.8	18.3	9.9
Others	7.0	10.0	8.4
Number of doctors	71	60	131

Doctors in OHs reported the presence of all these reasons more often than the doctors in DHs. It means that, relatively, the constraints for providing quality of care are more for OHs than for DHs. If we see the political interference separately for DHs and OHs, the problem is more acute in the later (68 percent) than the former (35 percent).

Assessment of Facilities Available in their Own Hospitals

Besides the general question about the government hospitals, we have specifically asked the doctors about the adequacy of the facilities (personnel, equipment, medicines, diagnostic facilities, transport, and space) available in their own hospitals where they are currently posted (Table 6). Only about one-third of the doctors said that personnel, equipment and medicine norms are 'totally fulfilled' in their hospital, the remaining doctors said that these are either 'somewhat fulfilled' or 'not fulfilled'. The fulfilment of diagnostic facilities (lab and X-ray in case of OHs; lab, X-ray, Blood Bank and Sonography in case of DHs) and support services like transport and food (in case

Table 6: Assessment of facilities available in their own hospitals

Facilities "totally fulfilled" in the hospital according to the assessment of doctors (%)	DH	OH	Total
Personnel	31.0	35.0	32.8
Equipment	28.3	33.3	30.5
Medicines	39.4	25.0	32.8
Diagnostic facilities (lab, x-ray, BB, Sonography)	67.6	58.3	63.4
Support services (transport, commn., cleaning, food)	66.2	41.7	55.0
Space	69.0	48.3	59.5
Number of doctors	71	60	131

of DHs), cleaning, communication and space are relatively better than the personnel, equipment and medicines. These support services are relatively better fulfilled in DHs than in OHs.

Dimensions of Work Environment

Under this dimension the satisfaction regarding timetable, nature of work, time spent with the patients, interference from politicians, promotion/transfers on merit are assessed (Table 7). Two-thirds of the doctors are satisfied with the time table of their work and the remaining one-third are not satisfied with it. There is no difference in the doctors' satisfaction of time table between OHs and DHs. Regarding the nature of work, 71 percent of the doctors are satisfied with it and the satisfaction being slightly higher among the doctors in OHs (75 percent) compared to the DHs (68 percent). Dissatisfaction about the nature of work is slightly higher among the doctors in DHs (31 percent) compared to the doctors in OHs (22 percent).

On an average the doctors spend about 10 minutes per patient in IPD and 6.2 minutes per patient in OPD. While time spent by the doctors with the IPD patients is same in OHs and DHs, the time spent by the doctors with the OPD patients is slightly higher in OHs (6.4 minutes) than in the DHs (5.9 minutes). This may due to the higher OPD patient turnover in DHs. Satisfaction with the time spent per patient by the doctors shows that only 56 percent are satisfied with it in IPD and 40 percent in OPD. Hence the dissatisfaction among the doctors for the time spent is higher for OPD than for IPD.

To understand the extent of political interference we have asked the doctors whether they have faced any such interference from politicians. One-third of the doctors said that they themselves have 'often experienced' the political interference. Only one-fifth of the doctors said that they have never experienced political interference. To understand how merit is valued in the public health department, we have asked a question to the doctors whether promotions and transfers are done according to merit or not. In response to this question, 42 percent of the doctors said that merit is not at all taken into account for promotion or transfer. Only 18 percent of the doctors said that the promotions and transfers are done by merit only. The doctors' response reflects the level of mismanagement of promotions and transfers in the public health department. This will have implications for the quality of health care as the provider satisfaction is an important component of the client satisfaction.

Table 7: Dimensions of work environment

Dimensions in work environment (%)	DH	OH	Total
Satisfied with the time table	67.8	65.0	66.4
Satisfied with the nature of work	67.6	75.0	71.0
Average time spent per patient in IPD (in minutes)	10.1	9.8	10.1
Average time spent per patient in OPD (in minutes)	5.9	6.4	6.2
Satisfied with the time spent per patient in IPD	54.2	58.3	56.3
Satisfied with the time spent per patient in OPD	38.9	41.7	40.3
Often experienced interference from politicians	36.6	31.7	34.4
Merit not taken into account for promotions/ transfers	40.8	43.3	42.0
Number of doctors	71	60	131

Dimensions of Work Relationship

Under this dimension the issues like working relationship with colleagues (juniors, colleagues and seniors); appreciation from superiors; independence from interference by superiors; and respect and trust from clients are covered (Table 8). Many a time, same patient is looked after by more than one doctor in hospitals. Hence, a team work for the doctors is always necessary in their daily duty, particularly for operations. Nearly seventy percent of the doctors said that such team work always exists among them. If we go by their other responses for this question, it appears that team work in general is better in both district

and other hospitals. Doctors don't have any hesitation in contacting their other colleagues as 83 percent of them are fully comfortable in contacting other doctors. Similarly 80 percent of the doctors exchange ideas and information between themselves. It appears that team work and work relationships are better among doctors in both district and other hospitals.

To understand the work culture among the junior staff we have asked a question to the doctors whether your junior staff work according to the norm. Only half of the doctors said that the junior staffs work according to the norm and another 37 percent felt that they work only partially according to the norm. Though half of the doctors said that junior staffs work according to the norm, three-fourth of them are satisfied with the assistance offered by the junior staff. Twenty-one percent of the doctors were not satisfied with the assistance offered by their junior doctors.

To understand the doctors' relationship with their senior colleagues (Civil Surgeon and RMO) we have asked the doctors whether they have talked to the CS and RMO regarding the hospital matters. Eighty-four percent of the doctors said that they have talked to their seniors regarding the hospital matters. The percent of doctors talked to their seniors are higher in DHs than in OHs. Most of these doctors feel that the seniors respond positively when they talk to them.

Another dimension with the work relationship is the doctor-patient relationship. To understand this relationship we have first asked the doctors whether patients have respect and trust in you. Eighty-eight percent of the doctors said yes, and this percent is more in DHs (92 percent) compared to the OHs (83 percent). We further asked the doctors: have you ever experienced strong/fighting reaction from the patients? Sixteen percent of the doctors said that they had very often experienced the fighting reaction from patients and another 38 percent said that they had occasionally experienced. We have further asked the doctors whether this fighting attitude is frequent these days. One-fourth of doctors said that it is increasing these days and two-third said that it is not.

When the doctors do a good work or perform well, an appreciation from superiors is always necessary to recognise such good performance. To understand this we have asked the doctors whether the superiors appreciate their good work or not. In response, 44 percent of the doctors said that the superiors always appreciate the good work done by them and another 31 percent said that they appreciate only some times.

Table 8: Dimensions of work relationship

Dimensions in work relationship (%)	DH	OH	Total
Presence of team work always	69.0	68.3	68.7
Fully comfortable in contacting other doctors	85.9	78.3	82.4
Junior staff work according to the norm	46.3	58.3	51.9
Satisfaction with the assistance of junior staff	74.6	75.0	74.8
Attitude of colleagues encouraging	74.6	68.3	71.8
CS/RMO responds positively for issues	87.5	87.0	87.3
Patients have respect and trust in doctor	91.5	83.3	87.8
Often experienced fighting reaction from patients	16.9	15.0	16.0
Fighting attitude of patients frequent these days	19.7	26.3	23.7
Always superiors appreciate good work	40.8	48.3	44.3
Total number of doctors	71	60	131

Dimensions of Professional Satisfaction

To understand the professional satisfaction among the doctors, its dimensions like training opportunities, utilisation of expertise in the job, opportunities for career advancement in job, and satisfaction with the accomplishment are covered (Table 9). Nearly 80 percent of the doctors were deputed for on job training programmes of various durations and the remaining 20 percent were not deputed for any programmes. Among the doctors, 55 percent are satisfied with their present work, 36 percent are somewhat satisfied and 10 percent are totally not satisfied with the present work. Though the level of total dissatisfaction with the job is only 10 percent, even this level of dissatisfaction should be a matter of concern for the management. The level of satisfaction with the present work is higher in DHs (62 percent) compared to the OHs (47 percent). Regarding the utilisation of their expertise, nearly half (47 percent) of the doctors said that they are able to utilise their expertise in the job to the fullest extent, 45 percent said that they are able to utilise to some extent and 6 percent very rarely. More doctors in DHs (55 percent) than in OHs (38 percent) said that they are able to utilise their expertise to the fullest

extent. This reveals the non availability of infrastructure to utilise the expertise of the doctors to the fullest extent, particularly in OHs.

In general, timely promotion is an important matter for job satisfaction among the employees. Percentage of doctors who said that they are satisfied to a large extent in their accomplishment so far is 42 percent. Satisfaction with the accomplishment is higher among the doctors in DHs (48 percent) than in OHs (35 percent). One fourth of the doctors said that government service does not have a good scope for career advancement whereas one-fifth of the doctors said that government service does have a good scope for career advancement for all.

There is a general impression that the doctors doing private practice earn more and progress better. To know how the government doctors react to this issue we added a question: do you think that you would have progressed better in a private practice? Forty six percent of the doctors said that they would have progressed better in a private practice and 36 percent said that 'can't say'. Those who said that they would have progressed better in a private practice is more in DHs (51 percent) than in OHs (40 percent).

Table 9: Dimensions of professional satisfaction

Dimensions of professional satisfaction (%)	DH	OH	Total
Deputed for on-job training programmes	77.5	76.7	77.1
Satisfied with the present work	62.0	46.7	55.0
Fully able to utilise the expertise in the job	54.9	38.3	47.3
Fully satisfied with the accomplishments so far	47.9	35.0	42.0
Would have progressed better in a private practice	50.7	40.0	45.8
Govt. service has a good scope for career advancement	16.9	25.0	20.6
Total number of doctors	71	60	131

Dimensions of Personal Loses and Gains

Housing, family problems (eg., education of children, working spouse, time for family) and pay package are the issues addressed under personal gains and losses (Table 10). More than half of the doctors (53 percent) are living in staff quarters provided by the administration within the hospital premises. The percent of doctors staying in staff quarters is more in OHs (60 percent) than in DHs (47 percent). Among those living in staff quarters 35 percent are not satisfied with the condition of the quarters. Dissatisfaction with the condition of the quarters is more in DHs (39 percent) than in OHs (31 percent).

Those who are not staying in staff quarters were asked about their staying arrangement. Among those who are not staying in the staff quarters, half of them stay in their own houses and the remaining half stay in rented accommodations. On the whole, 75 percent of the doctors either live in staff quarters or live in their own houses. This percentage is higher for the doctors in OHs (82 percent) compared to the doctors in DHs (69 percent). It appears that the residential accommodation is not a major problem for the doctors as only 15 percent in OHs and 28 percent in DHs stay in rented houses even this may be due to their convenience for private practice.

Doctors who are not staying in the quarters were asked about the distance of the residence from the hospital. The distance from the hospital reveals that most of these doctors reside very close to hospital (70 percent within two kms). Among those who are not residing in staff quarters 82 percent use their own private vehicles to commute to the hospital. Since the accommodation does not appear to be a major problem for the doctors, the issues like better maintenance of the quarters should be given importance by the management as many of them are not happy with the maintenance of the quarters.

Since the doctors' job is transferable, they face problems like education of their children and the job of the spouse. We have asked a question: do you face any such problems? Three-fourth of the doctors said that yes, they face such problems. Doctors facing such problems are more in DHs (79 percent) compared to the OHs (70 percent). For many doctors the jobs are assigned round the clock in the hospitals. Due to this nature of job they don't get sufficient time for family/personal work. Forty-four percent of the doctors said that they don't get time for family/personal work. This problem is more severe for the doctors in DHs (56 percent) than in OHs (30 percent). It seems that the doctors working in DHs are relatively facing more family problems (children's' education, job of spouse and lack of time for personal work) than their counterparts in OHs.

By being in the government services, the doctors can easily avail the health services for their family members. This is one of the important personal benefits for the doctors. Sixty-two percent of the doctors said that their government service leads to an easy access to health services for the family. Slightly more doctors in DHs (66 percent) compared to OHs (57 percent) agreed to this personal benefit. Salary is an important component of personal gains for the doctors. Only 29 percent of the doctors said that their pay package is adequate and the remaining 71 percent said that it is inadequate.

Table 10: Personal losses and gains

Dimensions of personal gains and loses (%)	DH	OH	Total
Live in staff quarters	46.5	60.0	52.7
Satisfied with the condition of the staff quarters	30.3	16.7	23.2
Easy access to health services for the family	66.2	56.7	61.8
Face family problems (education, spouse working)	78.9	70.0	74.8
Not getting sufficient time for family	56.3	30.0	44.0
Pay package is adequate	29.6	28.3	29.0
Total number of doctors	71	60	131

Satisfaction Scores for Doctors

For each dimension of satisfaction (work environment, work relationship, professional satisfaction and personal gains and losses) we have calculated the satisfaction scores for doctors. For each dimension, the satisfaction score ranges from a minimum of 0 to a maximum of 100. In addition to the above dimensions, we have also calculated a score for political interference and the importance given to merit for promotions/transfers. We give below the satisfaction levels of doctors by each dimension.

The satisfaction scores regarding various dimensions of the work are low among the doctors. Among the dimensions, the maximum satisfaction is with the work relationship and the lowest satisfaction is with the political interference and merit not taken into account for promotions/transfers. The satisfaction regarding the work relationship is similar in DHs and OHs at 70.4 and 72.3 respectively. In both the DHs and OHs the satisfaction regarding the work environment is low at 44.2 and 45.3

Table 11: Satisfaction scores of doctors by different dimensions

(Maximum score = 100)

Dimensions of satisfactionl	District Hospitals		Other Hospitals	
	Number	Score	Number	Score
Work environment	71	44.2	60	45.3
Work relationship	71	70.4	60	72.3
Professional satisfaction	71	50.6	60	42.1
Personal gains and loses	71	29.9	60	31.0
Political interference & merit not considered	71	18.7	60	23.8

respectively. Doctors in DHs are relatively better-satisfied (50.6) in professional satisfaction than the doctors in OHs (42.1). The satisfaction in terms of personal gains is very low and almost similar across district and other hospitals (31.0 and 29.9 respectively). The dissatisfaction regarding the political interference is highest in the hospitals as the scores are very low in DHs and OHs (18.7 and 23.8 respectively).

Provider Satisfaction: Nurses

Besides the doctors, nurses are one of the important components of the health care delivery system. They take care of the patients round the clock, particularly in IPDs. Since the nurses interact with the patients more often than the doctors their care and courtesy are even more crucial in patient care. For the interview, we have purposively selected the senior nurses in the hospitals i.e., all in-charge nurses and senior ones among the staff nurses. In the following section we provide the job satisfaction levels of nurses.

Dimensions of Work Environment

Work environment of the nurses reveals severe shortages of personnel and other physical inputs available to them in the hospitals (Table 12). For example, only 44 percent of the nurses said that they have adequate staff nurses. Shortage of staff nurses appear to be more acute in DHs compared to the OHs as only 35 percent of the nurses from DHs said that they have adequate staff nurses compared to half of the nurses from OHs. Similarly adequacy of supporting staff for nurses (*ayas* and ward boys) is also in severe shortage, particularly in DHs according to the nurses.

The problems of medicines are faced by the nurses more directly than the doctors, because nurses have to distribute the medicines to the patients. Only 29 percent of the nurses said that the hospital has no shortage of

medicines. Adequacy of equipments is somewhat better than the adequacy of medicines in the hospitals as half of the nurses said that they have adequate supply of equipments. Only 31 percent of the nurses said that the promotions/transfers are done on merit. Forty-three percent of the nurses from DHs agreed that the promotions/transfers are done on merit in DHs (43 percent) whereas only 22 percent agreed so in OHs. This is possible as most of the nurses working in DHs are gone there on promotions from OHs.

Table 12: Dimensions of work environment

Dimensions of work envinorment (%)	DH	OH	Total
Adequacy of staff nurses	35.3	50.0	43.5
Adequacy of *ayas*	17.6	23.4	20.9
Adequacy of ward boys	21.6	43.8	33.9
Adequacy of supply of medicines	31.4	26.6	28.7
Adequacy of supply of equipments	54.9	50.0	52.2
Promotions/transfers are done only on merit	43.1	21.9	31.3

Dimensions of Work Relationship

For the nurses, work relationship with the seniors, colleagues, juniors and patients is important in hospitals to co-ordinate the patient care activities. Appreciation from the seniors for the good work done by the nurses is also an important part of the work relationship as it increases the morale of the nurses to perform better. Ninety three percent of the nurses said that the staff nurses work according to the norm (Table 13). Four-fifth of the nurses is also satisfied with the assistance offered by the staff nurses. It appears that the work relationship among the nurses is by and large good. The better work culture among them is helpful for the nursing care which ultimately benefits the patients. Regarding the work of ayas and ward boys, 74-83 percent of the nurses said that ayas and ward boys work according to the norm.

Almost all the nurses discuss with their colleagues regarding the issues of the hospitals and 63 percent of them discuss the issues very often. Nearly 80 percent of the nurses reported that the attitude of their colleagues is encouraging when they discuss the issues of the hospital. Similarly, almost all the nurses talk to their senior colleagues (Matron, RMO and Civil Surgeon) about the improvement needed in their hospital and 90 percent of the nurses reported that the seniors always respond positively. The work relationship of the nurses by and large

Table 13: Dimensions of work relationship

Dimensions of work relationship (%)	DH	OH	Total
Staff Nurses work according to the norm	94.1	91.8	92.9
Fully satisfied with the assistance of Staff Nurses	80.0	75.5	77.8
Ayas work according to the norm	60.0	84.3	73.6
Ward boys work according to the norm	68.2	93.4	82.9
Have frequent discussion with colleagues	66.7	59.4	62.6
Attitude of colleagues encouraging	76.5	81.3	79.1
CS/RMO responds positively for issues	92.2	88.7	90.3
Patients have trust in nurses	94.1	96.9	95.7
Often experienced fighting reaction from pts.	9.8	4.7	7.0
Patients' fighting reaction is increasing	64.7	56.3	60.0
Superiors always appreciate the good work	43.1	32.8	37.4
Number of Nurses	51	64	115

indicates the better work culture between seniors and juniors. But the appreciation of the seniors for the good work done by the nurses is not universal as only 37 percent of the nurses said that their seniors always appreciate them when they do a good work.

Client-provider Relationship

Regarding the nurse-patient relationship, 96 percent of the nurses feel that the patients have respect and trust for nurses. However, seven percent of the nurses (and 16 percent of the doctors) said that they had experienced strong reaction from patients very often. The responses to the question on experience of strong reaction (often, occasionally and rarely) from patients reveal that three-fourth of the nurses (also the same percentage of doctors) have experienced strong reaction from patients at varying degrees at some point of time in their career. Sixty percent of the nurses reported that the fighting attitude of the patients is increasing these days. This is much higher than the percentage reported by the doctors (24 percent). From the responses of the doctors and nurses it is clear that the 'strong reaction' of the patients is increasing these days (Table 14). On the one side, though this attitude of the patients may indicate the demand for better health services, the other side it indicates that appropriate training/

Table 14: Client-provider relationship

Client-provider relationship (%)	Doctors			Nurses		
	DH	OH	Total	DH	OH	Total
Patients have respect and trust in you	91.5	83.3	87.8	94.1	96.9	95.7
Often experienced strong reaction from patients	16.9	15.0	16.0	9.8	4.7	7.0
Ever experienced strong reaction from patients	76.0	76.7	76.3	80.4	73.5	76.6
Patients' strong reaction is frequent these days	19.7	26.3	23.7	64.7	56.3	60.0
Number of doctors/nurses	71	60	131	51	64	115

orientation programmes should be designed to address the issues related to the patient-provider relationship.

Dimensions of Professional Satisfaction

Eighty one percent of the nurses were deputed for the on job training programme sometime during their career and 89 percent are satisfied with the present time table that they are working (Table 15). But their assessment regarding the workload assigned to them gives a mixed picture. More than half of the nurses (55 percent) feel that they are overburdened with the workload. The proportion of nurses who said that they are overburdened is much higher in DHs (67 percent) compared to the nurses in OHs (45 percent). Further, we have asked their opinion regarding the nature of work. Forty percent of the nurses feel that their nature of work is properly designed and the remaining 60 percent said that the nature of work needs improvement. Those who said that the nature of work needs improvement are much higher in DHs (75 percent) than in OHs (47 percent). The responses to the questions on 'workload' and 'nature of work' reveal that the nurses are generally overburdened with the work, particularly in DHs.

Nurses take care of the patients round the clock, particularly in IPDs. It means that their care and interaction with the patients is more than the doctors'. To know from the nurses that their contribution to the patient care is recognized by the patients or not, we have a given a statement to the nurses that doctors get credit for curing/ teating the patients than nurses. The response shows that half of the nurses agreed to the statement that the credit goes for the doctor than the nurses and the remaining half did not agree to this statement. The percentage agreed to the statement is more in DHs (63 percent) than in OHs (42 percent). Since the doctors in DHs are generally seniors and specialists, it is natural that patients attach more credit to the doctors than to the nurses.

Table 15: Dimensions of professional satisfaction

Dimensions of professional satisfaction (%)	DH	OH	Total
Deputed for training programmes	84.3	78.1	80.9
Satisfied with current time schedule	92.2	85.9	88.7
Workload overburdened	66.7	45.3	54.8
Nature of work needs improvement	74.5	46.9	59.1
Doctors get credit for curing patients than nurses	62.7	42.2	51.3
Number of Nurses	51	64	115

Dimensions of Personal Gains and Loses

Among the nurses, 40 percent are living in staff quarters and the remaining live outside (Table 16). As expected, the

Table 16: Dimensions of personal gains and losses

Dimensions of personal gains and loses (%)	DH	OH	Total
Staying in staff quarters	17.6	57.8	40.0
Not satisfied with the condition of staff quarters	33.3*	10.8	15.2
Residence within three kms (if not staying in quarters)	71.4	88.9	78.2
Easy access to health services for family	80.4	79.7	80.0
Face family problems due to transfer	78.4	79.7	79.1
Get sufficient time for family/ personal work	47.1	42.2	44.3
Don't getting sufficient time for family/personal work	21.6	21.9	21.7
Pay package adequate	54.9	89.1	73.9
Number of Nurses	51	64	115

Note: * based on 3 cases as only 9 nurses from DHs are living in quarters

Table 17: Comparison of personal gains and losses for doctors and nurses

Personal gains and losses (%)	Doctors			Nurses		
	DH	OH	Total	DH	OH	Total
Staying in staff quarters	53.5	40.0	47.3	17.6	57.8	40.0
Not satisfied with the condition of staff quartrs	39.4	30.6	34.8	33.3	10.8	15.2
Residence within a km (if not staying in quarts)	23.7	66.7	40.3	33.3	55.6	42.0
Easy access to health services for family	66.2	56.7	61.8	80.4	79.7	80.0
Face family problems due to transfer	78.9	70.0	74.8	78.4	79.7	79.1
Don't get sufficient time for personal work	56.3	30.0	44.3	21.6	21.9	21.7
Pay package adequate	29.6	28.3	29.0	54.9	89.1	73.9
Number of doctors/nurses	71	60	131	51	64	115

percentage of nurses living in staff quarters is much higher in OHs (58 percent) compared to DHs (18 percent). It appears that for the nurses working in DHs, housing is not a major problem as 59 percent of them staying in their own residences, 18 percent in quarters and 22 percent in rented accommodations. Among the nurses who are living in staff quarters 15 percent are not satisfied with the condition of the staff quarters. This is considerably lower than the doctors' dissatisfaction with the condition of the quarters (35 percent). Among those who reside outside the quarters nearly 80 percent of them reside within the distance of three kilometres from the hospital.

More nurses (80 percent) than the doctors (62 percent) said that working in the government hospital leads to an easy access to health services for the family members (Table 17). But 79 percent of the nurses said that they face family problems (education of children and husbands' job) on account of their work in the government hospital. The percentage of doctors who said so was 75 percent. It appears that the majority of the doctors and nurses (75-79 percent) face the family problems.

One-fifth of the nurses (22 percent) said that they don't get sufficient time for their personal and family work. More doctors (44 percent) than nurses said that they don't get sufficient time for family and personal work. In all, three-fourth of the nurses said that their pay package is adequate and the remaining one fourth feels that the pay is not adequate. But there is a vast variation between the nurses in OHs and DHs regarding the opinion on their pay package: 89 percent of the nurses from OHs feel that their salary is adequate whereas only 54 percent of the nurses from DHs feel so. When we compare the satisfaction of doctors and nurses with their salary we find that the doctors are more dissatisfied with their salary than the nurses: only 29 percent of the doctors whereas 74 percent of the nurses felt that their salary is adequate. Doctors normally compare their salary with the higher earnings of the doctors who practice privately and feel that the salary given by the government is lower. But nurses cannot compare their salary with the salary of the nurses working in private hospitals as the salary paid to the government nurses is much higher than the salary paid in the private hospitals.

Satisfaction Scores of Nurses

The satisfaction scores for the nurses were computed as we have done for the doctors. Satisfaction scores in general, are lower for the nurses and the satisfaction levels are more or less similar in both DHs and OHs (Table 18). In personal gains and losses, nurses in OHs are relatively

Table 18: Satisfaction scores of nurses by different dimensions

(Maximum score = 100)

Dimensions of satisfaction	Satisfaction Scores			
	District Hospitals		Other Hospitals	
	Number	Score	Number	Score
Work environment	51	38.9	64	37.4
Work relationship	51	64.0	64	65.4
Professional satisfaction	51	55.5	64	54.6
Personal gains and losses	51	39.1	64	47.3

better satisfied than their counterparts in DHs. In both the OHs and DHs, satisfaction score for work relationship is higher than for the other dimensions. Nurses are more dissatisfied with their work environment compared to the other dimensions as the scores are less than 40.

Provider Satisfaction: Technicians

Out of 78 technicians interviewed for the study, 57 are from OHs and the remaining 21 are from DHs (Table 19). One-third is x-ray technicians, another one-third is lab technicians, two-fifths is ophthalmic technicians and the remaining (14 percent) are pathology, EGG, and BB technicians. For the better diagnosis of the diseases by the doctors the hospitals should have adequate number of technicians. Any shortage in the technicians will hamper the process of diagnosis and ultimately patients are put in a disadvantaged position. In all, 37 percent of the technicians said that their hospital does not have adequate number of technicians. The shortage of technicians is acute in DHs as 14 out of 21 technicians said that their hospital does not have adequate number of technicians.

Forty four percent of the technicians do not face any shortage of supply of materials required for their work. But more technicians face the shortage of supply in materials in OHs than in DHs. It appears that DHs face more shortage of technicians whereas OHs face inadequate supply of materials. Nearly two-third of the technicians said that they don't face any shortage of equipments. Only half of the technicians feel that space given to their work is adequate. Three-fifth of the technicians said that they face difficulties in doing their work. When we asked the technicians to specify the nature of difficulties faced by them they have mainly listed the shortage of staff, materials, equipment, and heavy workload. Among those with difficulties in their work, 87 percent have talked to the superiors about the same. When they talk to the seniors 60 percent of them feel that the seniors' response was positive.

Appreciation by the superiors for the good work done by the technicians is not universal as only 59 percent said that their superiors always appreciate the good work. The technicians who said that their superiors never appreciate the good work are 15 percent. Almost every technician (72 out of 78) is satisfied with his/her work. One third of the technicians feel that they face pressure at work. Technicians who feel that they are overburdened with the workload are much higher in DHs (67 percent) compared to OHs (25 percent). Interview of technicians mainly reveals that there are shortages of staff, supply of equipment and materials, space and heavy workload. Due to the shortages of the technicians they feel that they are overburdened, particularly in DHs.

Table 19: Dimensions of satisfaction of technicians

Dimensions of satisfaction of technicians (%)	DH	OH	Total
Hospital has adequate number of technicians	33.3	73.7	62.8
Have adequate supply of materials	57.1	38.6	43.6
Have adequate equipments	66.7	63.2	64.1
Have adequate space	57.1	50.9	52.6
Face difficulties in doing the work	61.9	57.1	59.0
Talked to seniors about difficulties in the work	100.0	81.8	87.0
Superiors always appreciate good work	57.1	59.6	59.0
Satisfied with the work	90.5	93.0	92.3
Face pressure at work	38.1	33.3	34.6
Workload overburdened	66.7	24.6	35.9
Number of technicians	21	57	78

Assessment of pharmacists regarding supply of medicines

Interviews of the doctors, nurses and patients have revealed that there is a shortage of supply of medicines in the hospitals. Pharmacist of the hospitals who distribute the medicines to the different wards can assess the situation much better. We have interviewed one pharmacist from each hospital selected for the study mainly to know the

Table 20: Shortage of medicines as reported by clients and providers

Shortage of medicines as reported by clients and providers	Percent
Patients	
DHs-IPD patients: totally satisfied with the availability of medicines	61.2
OHs-IPD patients: totally satisfied with the availability of medicines	60.5
Doctors	
DHs.-Doctors: Medicines supply totally fulfilled in the hospital	39.4
OHs- Doctors: Medicines supply totally fulfilled in the hospital	25.0
Nurses	
DHs. Nurses: Medicines supply totally fulfilled	31.4
OHs-Nurses: Medicines supply totally fulfilled	26.6
Pharmacist	
All hospitals: No shortage of supply of medicines	38.5

availability of medicines. In all we have interviewed 26 pharmacists as two pharmacists were on leave during our fieldwork. Out of 26 pharmacists interviewed, only 10 of them (38.5 percent) said that they get adequate supply of medicines and the remaining 16 (61.5 percent) said that the medicine supply is not adequate (Table 20). It means that nearly 6 out of 10 hospitals face the shortage of medicines according to the assessment of pharmacists. The interviews of patients as well as well as different types of providers confirm the shortage of supply of medicines in the hospitals. The assessment of providers about the adequacy of medicines falls in the range of 25 to 40 percent. However, 61 percent of the patients are totally satisfied with the availability of medicines. In this respect, providers are the best judges than the patients.

Provider Satisfaction: Class-IV Employees

We have interviewed 57 Class-IV employees of the hospitals (38 from OHs and 19 from DHs) to understand their perception (Table not shown). These employees are lowest in the hierarchy of the hospital administration. Most of these class-IV employees work as ward boys (60 percent), sweepers (21 percent) and attendants in various departments of the hospital (office, lab, x-ray etc). Most of these employees are males (75 percent), educated above 8 years of schooling (70 percent), aged above 31 years (84 percent), and with more than 10 years of service (56 percent). Forty-two percent of these employees belong to scheduled cast and scheduled tribe category. Majority of these employees (84 percent) feel that they do the routine work. Similar to other providers, Class-IV employees also face the problems like shortage of supply of materials, heavy workload and work not related to their job. The opinions of the Class-IV employees reveal that the job satisfaction among them is better as most of them are happy with the salary and its timeliness; they see the opportunity for upward mobility; more than half of them don't see any problems in their work; and most of them are happy with the attitude of seniors. Even though they are doing the menial job in the hospitals their contribution is more crucial for the patient care. Hence their contribution should be recognized and appreciated properly by the authorities.

Summary and Conclusions

Although providers are important component of the health care service provision, their perspectives have received little attention compared to the clients' perspectives. In order to have a successful programme that serves clients well, we need a better understanding of the provider perspectives. In this study, we tried to understand their perspectives from the public hospitals in Maharashtra. Monetary benefits coupled with the job security were the major reasons for choosing the government services by the doctors. Majority of the doctors also see their profession as an opportunity to serve poor people. However, personal benefits outweigh the other reasons as for as reasons for joining government service is concerned. According to the providers, government hospitals are suffering from shortage of equipment, medicines, staff, diagnostic facilities and political interference. It means that the providers are working under the system with lot of inadequacies to fully satisfy the patients.

We have assessed the satisfaction of the providers under four major dimensions, viz., work environment, work relationship, professional satisfaction and personal gains and losses. The current work environment of the providers reveals the severe shortage of staff, equipment, medicines, and corruption and mismanagement of promotions and transfers. Unless providers are given a good physical infrastructure and freedom from political interference they cannot deliver the expected standards of health care. This will have very serious implications for the quality of health care as the provider satisfaction is an important component of the client satisfaction.

Dimensions of work relationship reveal that the team work and work relationships are better among providers. However, many of them feel that when they do a good work the appreciation and motivation from the senior authorities are lacking. Both the doctors and nurses feel that, though patient-provider relationships are good, the fighting reactions of patients are increasing in recent times. On one side, this attitude of the patients may indicate the demand for better health services, the other side it also indicates the deteriorating patient-provider relationship. Hence, measures to improve the client-provider relationship should be addressed.

According to the providers, on-job training opportunities are available to them in the system. However, half of the doctors felt that they are not able to utilise their expertise in the job, particularly in OHs. This reveals the non availability of infrastructure to utilise the expertise of the doctors to the fullest extent. Satisfaction with the present work is not universal and dissatisfaction is particularly higher among doctors than nurses. Job satisfaction and satisfaction with the accomplishment so far in the career are appear to be better among nurses

compared to the doctors. Majority of the doctors said that government service does not have a good scope for career advancement and nearly half of the doctors have the opinion that they would have progressed better in a private practice.

Staying arrangement, family problems and pay package are the issues addressed under personal gains and losses. Since the residential accommodation does not appear to be a major problem for the providers, the issues like better maintenance of the quarters should be given importance. More doctors than nurses said that they face family problems (children's education, job of spouse and lack of time for personal work) due to their job. Doctors are more dissatisfied with their salary than the nurses. Doctors normally compare their salary with the higher earnings of the doctors who practice privately and feel that the salary given by the government is lower. But nurses cannot compare their salary with the salary of the nurses working in private hospitals as the salary paid to the government nurses is much higher than the salary paid in the private hospitals.

Among the various dimensions of professional satisfaction, the highest dissatisfaction is found with respect to lack of scope for career advancement followed by the lack of satisfaction with their accomplishments. Lack of recognition of merit, is an issue, which is serious and has to be considered with priority. As it is, the comparison with the private sector, the family problems, the supposedly inadequate salary are making doctors unhappy. Added to these, if the merit is not recognised, the frustration will increase and the doctors may not be attracted to government service just for 'job security'. Efforts have to be made to be judicious in making decisions about promotions/ transfers. Doctors are highly dissatisfied with the 'personal gains'. The most disturbing factor is the inadequate salary. Genuinely, the starting salary of a doctor is very low (basic salary of Rs. 6,500).

The suggestions of what would increase the quality of health care in the public hospitals reflect both the needs of the hospital as well as the motivation of the providers. Good physical infrastructure, adequate salary for doctors, timely promotion, recognition for merit and less political interference would motivate them to provide the better quality of care for the patients. More importantly, regular and adequate supply of medicines and good support facilities would further help the providers to deliver a good quality of care.

Limitations of the Provider Satisfaction Study

It should be mentioned that the provider satisfaction studies reveal the quality of care from the perspectives of the providers. It doesn't mean that, if providers are given all the facilities, it would automatically improve the quality of care. Client satisfaction has to be incorporated in the drive to increase the quality of care in public health programmes. It is true that providers play a major role in identifying and meeting clients' health care needs. However, their service to the clients depends on providers' technical skills, interpersonal communication skills, infrastructure, and client perception about quality. When the providers' services and behaviour fail to meet the clients' expected standards, clients will simply go to the other provider. But poor and underprivileged patients may not have an alternative, and hence are forced to accept low quality of care in public hospitals, because they are poor. Some providers may not volunteer to take steps that would increase the quality, fearing that would increase their workload.

Some providers lack necessary technical and interpersonal communication skills to provide good quality of care. In a study in Uttar Pradesh ANMs could not define quality services or suggest how family planning services could be improved (Khan et al., 1995). Status difference between clients and providers can influence quality of care. A study in public hospitals in Maharashtra found that providers were more likely to behave nicely if clients were from rich classes (Taleem, 2002). Lack of supervision can also affect the quality. An evaluation of the eight national family planning programmes found weaknesses in supervisory mechanism (United Nations Population Fund, 1994) as one of the reasons for low quality of services. Poor supervisions often involve superficial inspections and window dressed performance in India's public health programmes (Mavalankar, 1999).

Government health functionaries usually blame the lack of equipment, medicines, manpower and supplies for the poor quality of services. However, some observers point out that even when all the facilities were made available, clients receive poor quality of care. Because, some health workers show little respect for clients especially, if the clients are from poor/illiterate and lower social strata and even believe that, because government provide free of services, clients have no right to demand good quality service (Ramasundaram, 1994). It is also reported by the surveys that the friendliness of the providers in India is lower in public health facilities compared to the private health facilities (IIPS and ORC Macro, 2000). All these issues suggests that providers need appropriate knowledge, behaviour, communication, skills, supplies, clinical environment and motivation to provide good quality of care.

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Man is harder than Iron, Stronger than Stone and more fragile than a rose

— Turkish proverb

Feature

Documentation Control System for Execution of Contract Packages for Construction of Oil Refinery

S.K. Sharma and D.K. Choudhury

The documentation system and control is most significant in construction of a project. A project can not progress properly unless there is a proper documentation system and control. The execution of a refinery project is done with respect to documents such as tender documents, drawings, technical specifications, work procedures, quality assurance plan, project construction schedule, etc. With this thing in mind, a Documentation Control System (DCS) for project execution has been derived taking into consideration the views and suggestions of main three players of a project—Client, Project Management Consultant, and Contractor. The research was conducted in refinery construction project site in India during construction of Panipat refinery expansion project through distribution of structured questionnaire on DCS to the Client (Indian Oil Corporation Ltd, the major Oil Producing Company in India), two Project Management Consultants (Engineers India Ltd and Toyo Engineering) and four Construction Contractors (Larsen & Toubro, Bridge & Roof, Punj Lloyds, and Indian Oil Tanking Ltd.) and collection of the views and suggestions of people working in key positions through personal interview. The DCS was finalized fulfilling the need of Client, Consultant, and the Contractor as also taking care of the requirement of ISO 9001 to ensure global uniformity. The Clients in both private and public sector, PMC and Contractors may find extensive use and application of this DCS in project execution.

S.K.Sharma is Professor, Mechanical Engg. Department, N.I.T. Kurukshetra and D.K.Choudhury is Senior Manager, Wood Group Engg. India Pvt. Ltd.

Introduction

One of the most important aspects of Project Management is the setting up of proper DCS. In construction project, at the very outset of the project a system is to be well defined and agreed by the Client/Consultant and Contractor to follow the same system during execution of the project to avoid any confusion at any stage. During the past few years many companies in the construction sector have made great efforts to introduce a quality system as an integral part of construction management. Many of these systems are structured in accordance with the standards contained in the ISO 9000 series (Landin, 2000). Chew and Chai (1996) reported that implementation of ISO 9000 to a construction company provides useful documented reference, improves communication between various departments in the same organization, provides formalized systems which ensure consistent quality services and rectifies errors at early stage. In construction site of an oil refinery one will come across works of different nature such as civil, mechanical, electrical, instrumentation. With activity being so diversified and carried out at far-flung locations, it is extremely useful to have a common system which every party is to follow (Tyler and Frost, 1993). Proper documentation is an art which makes the on going process of the project smooth and easy. In any project there will be enormous flow of information everyday. The proper documentation of information in a structured way is necessary for project execution and ISO 9001 may be very effectively applied as common platform to take care of domestic as well as global requirement. The importance of proper DCS is such that if you shut your eyes and think about construction of a project, you will realize that the entire project is hided within the envelope of huge documents which are required at every step for the execution and implementation of the project. The

documentation control system and procedure furnished over here refers specifically to the construction of a refinery project. While deriving the DCS, the major oil producing company in India, four very prominent construction contractors and two distinguished project management consultants (PMC) working in refinery construction site at Panipat, India were consulted. The persons in key position including resident construction manager and project manager at site were interviewed. The views of every individual on proposed DCS was collected and the suggestions made by them during interview were recorded. The DCS as mentioned here is the outcome of the research carried out at project construction site taking into consideration the requirements laid down in ISO 9001.

Project documentation

The need for better standards and specifications is a critical concern to the engineering community. A standardized approach to the preparation of construction documents, including specifications, can aid owners, architect/ engineers, and contractors (Huff, 1987). The ISO 9000 standards are a model for a documented quality system which focuses on the company and customer needs and expectation (Hiyassat, 2000). The DCS derived here conforms to the requirement of control of documents and control of records specified in ISO 9001:2000.

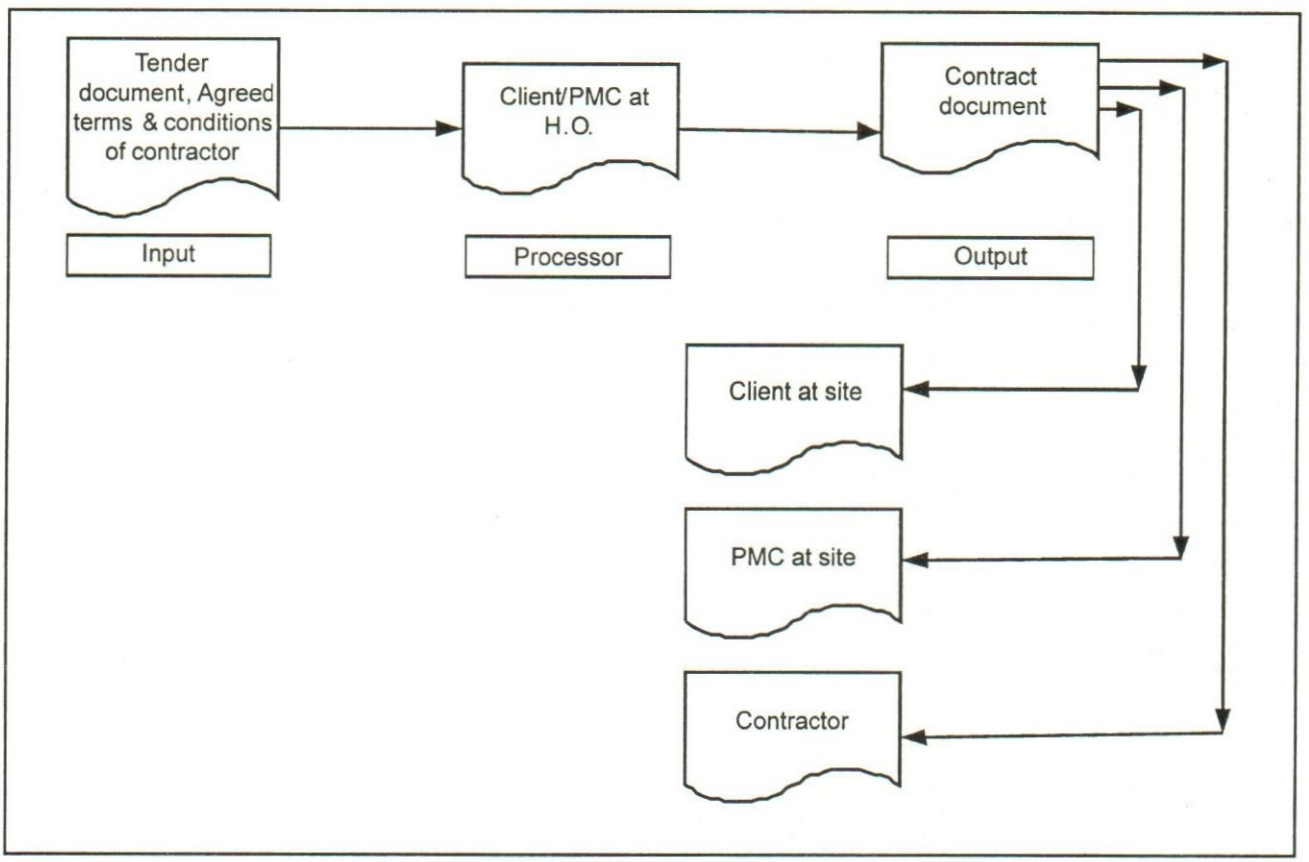
During construction of a project we come across following core documents from management point of view:

- Contract documents
- Planning documents
- Technical documents
- Materials control documents
- Inter organization/Inter office correspondences

Contract document

This document is generated by client/consultant covering all contractual obligations (both technical and commercial) agreed between client/consultant and contractor and becomes "Bible" for all the three parties through out the execution of the project. Since each contract varies from one another, this can not be standardized and hence is left open. The documentation process is illustrated through a flow diagram shown in Figure 1.

Figure 1: Flow diagram on contact documentation process



Planning documents

These documents are the main project execution plan and are prepared by contractor taking care of mainly completion schedule and other interface activities which are envisaged during project execution. This is again an agreed document between client/consultant and the contractor. The content of this document varies from contract to contract depending on type and nature of work and is used as main tool for progress monitoring. The planning document contains monthly program of work covering following:

1. Planning of activities showing start date and completion date
2. Planning of man power required for the activities planned
3. Planning of equipment and machinery required for completing the activities as per program of work
4. Planning of cash flow required to execute all the monthly activities planned

The sequential generation of document at different stages is shown in Figure 2 (Flow chart on planning and execution) while the documentation process is illustrated in Figure 3 (Flow diagram for planning documentation process).

Figure 2: Flow chart on planning and execution

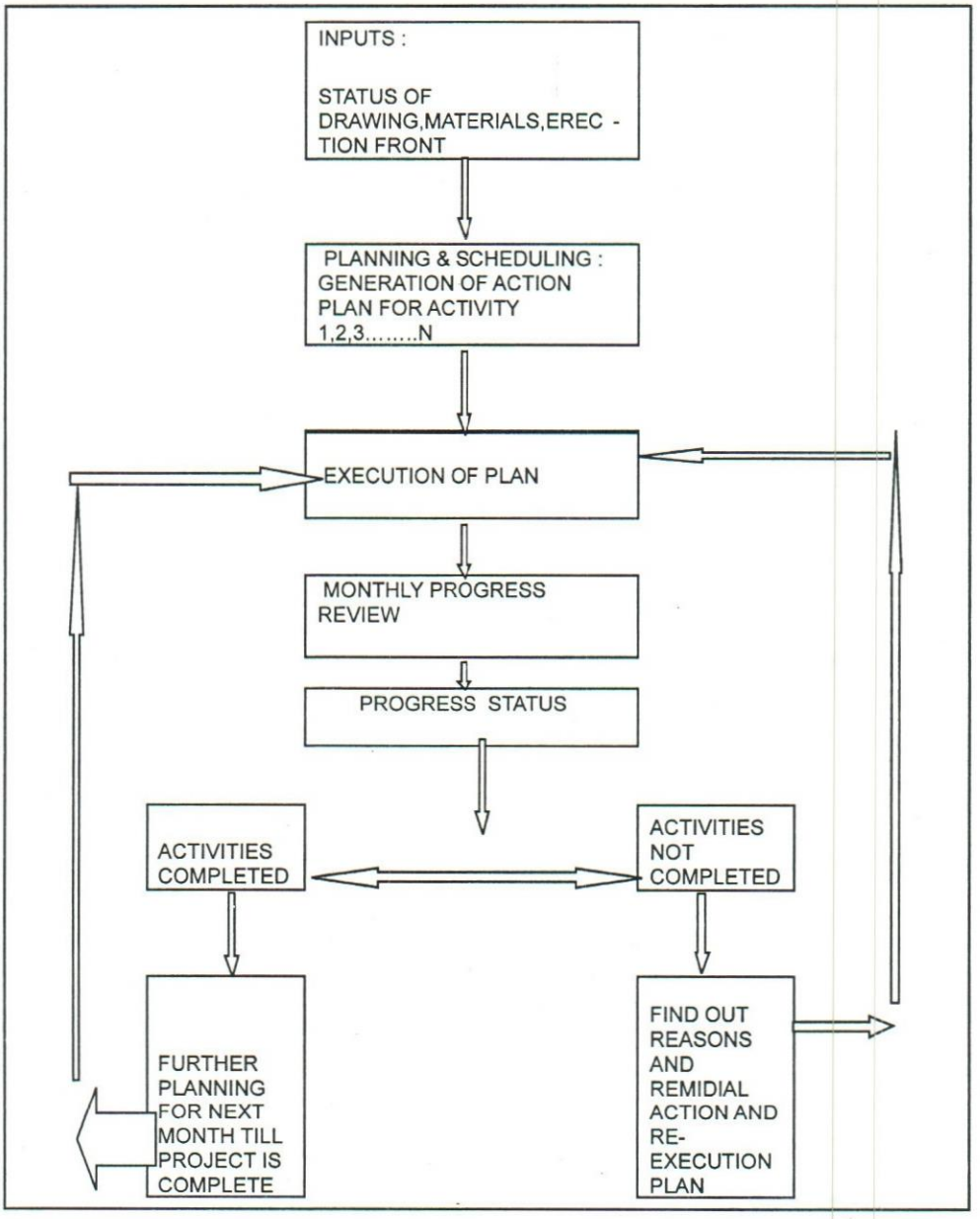
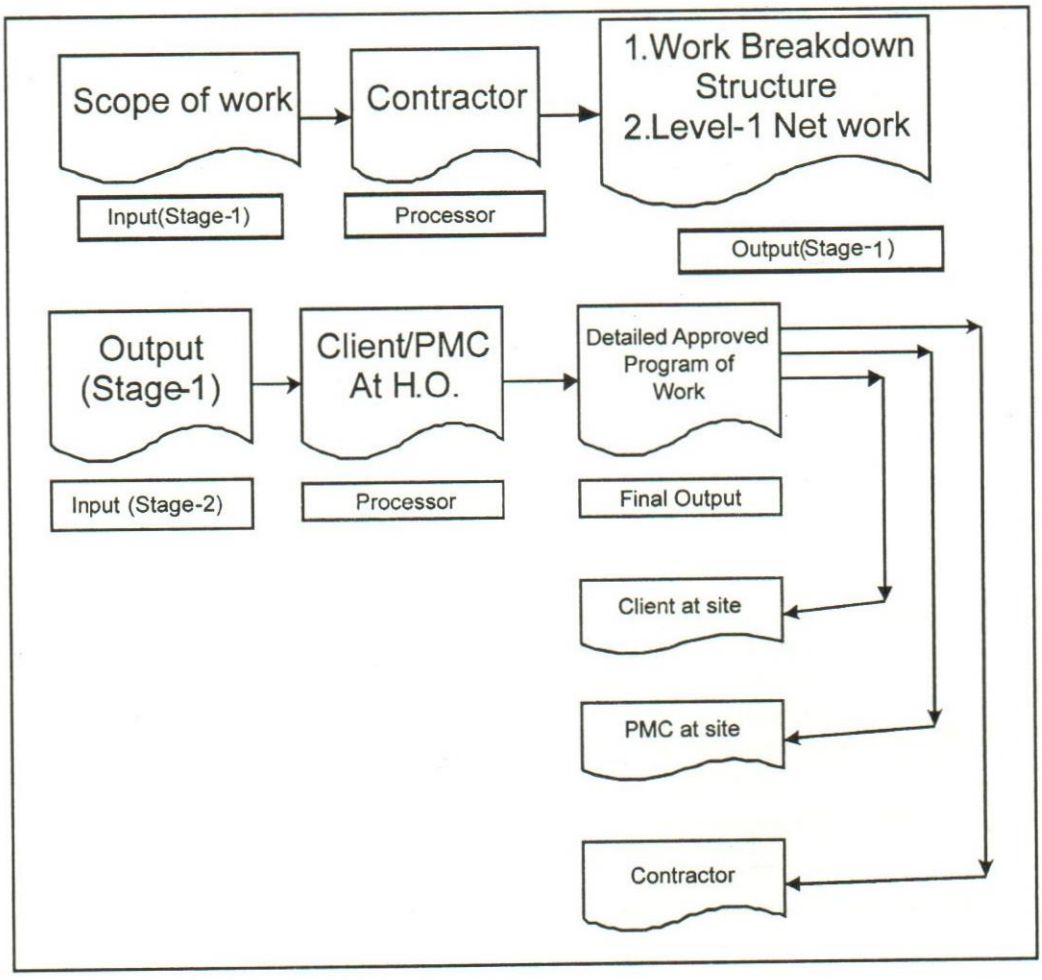


Figure 3: Flow chart for planning documentation process



Technical documents

The technical documentation mainly includes following:

- Drawings/design calculations/datasheet/ technical specifications. The technical documentation process has been illustrated in Figure 4 (Flow chart on technical documentation process).
- Work Procedure (WP) for civil, mechanical, electrical, and instrumentation work with respect to contract package. The documentation should cover different stages shown in Figure 5.
- Project Quality Plan: The Project Quality Plan (PQP) describes the project quality policy and quality objectives and outlines the quality program to be implemented for the project. The quality plan shall cover following aspects:

a) General statement regarding quality commitment.

b) Management and control system of quality plan.

c) Description of the project organization including job descriptions of key positions and the project organization chart.

d) Matrix of procedures/activities/responsibilities which should indicate how requirements of ISO 9001 standard are achieved with reference to the purpose of the work and contract requirements.

e) Index of applicable quality assurance procedures.

f) Index of project quality control plans.

g) List of applied reference documents

Figure 4: Flow diagram on technical documentation process

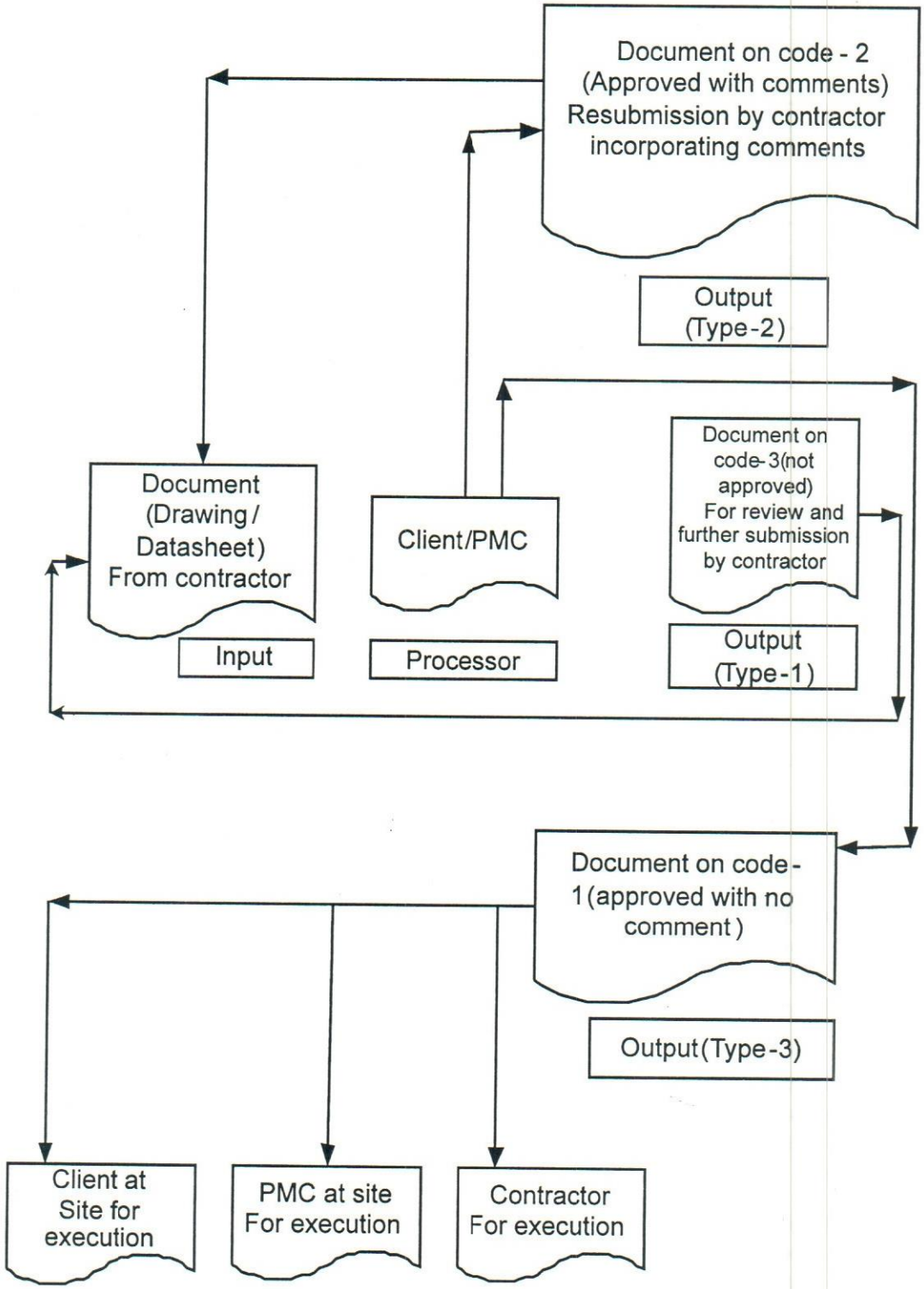
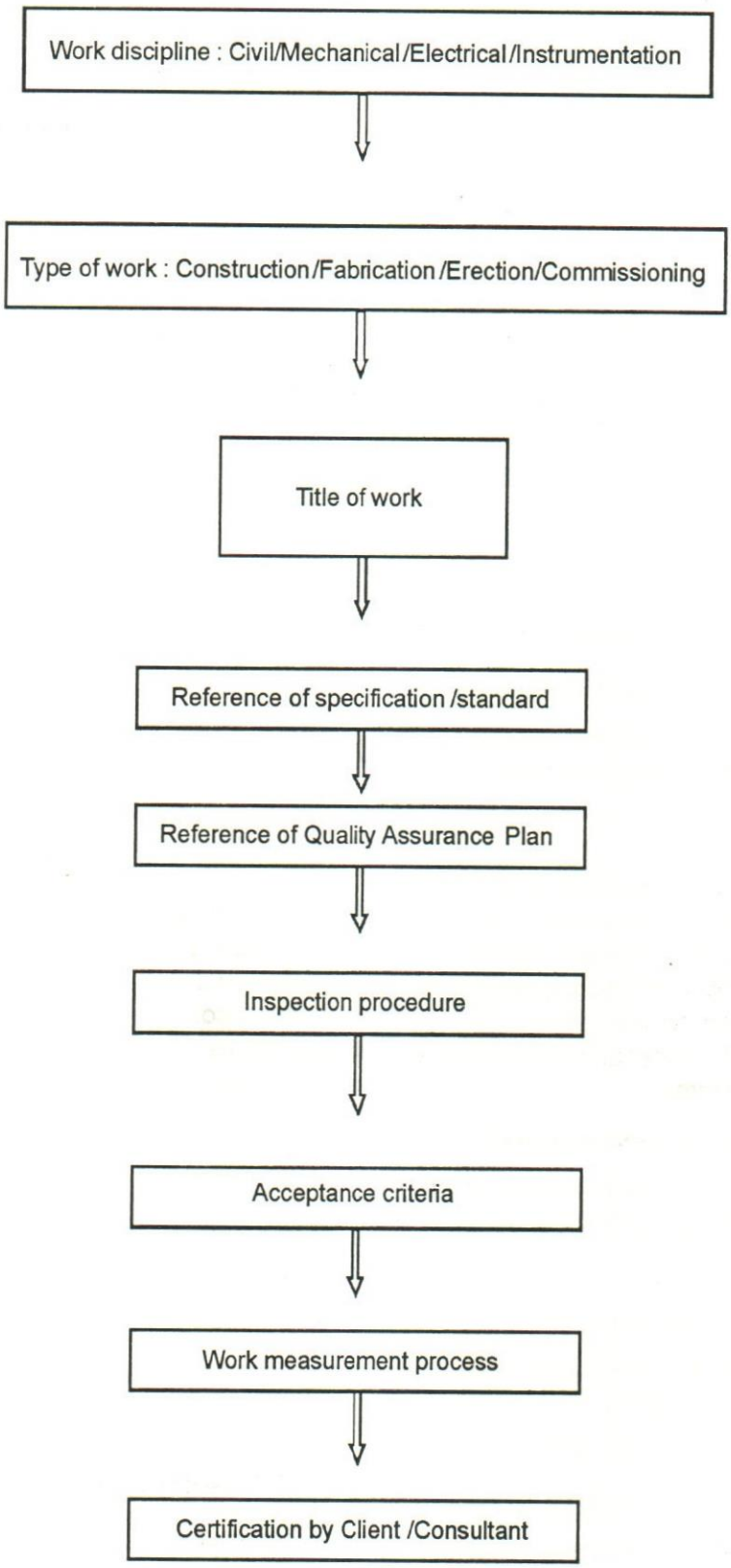


Figure 5: Flow chart on Work Procedure



- Health, Safety and Environmental (HSE) Plan: The project HSE plan defines the project's health, safety, and environmental policy and objectives to be achieved and prescribes the safety program to adopt with respect to work methodologies and their planning. The project HSE plan shall cover following:

  a) Company's HSE policy.

  b) Applicable HSE laws.

  c) Project organization and responsibilities with reference to HSE aspects.

  d) Safe working practices.

  e) Control and use of safety and personal protection equipment.

  f) Emergency procedures and safety drills.

  g) Reports and investigation on injuries, accidents.

  h) Personnel health and safety programs.

  i) HSE audits and inspections.

  j) Compliance of equipment and machinery with applicable HSE regulations.

Materials control documents

In the construction of projects, depending on the type of contract, it may be the responsibility of the contractor to supply the materials required for construction or the client/ consultant may decide to procure and supply the materials required for construction to the contractor. The documentation procedure for either of these options has been mentioned below separately.

Interorganization/Interoffice correspondences

The documents generated are of various types covering the total scope of project during construction. These may be letter/fax message/e-mails.

Document Coding and Numbering System

For Interorganization/Interoffice communication, the coding procedure shall be as laid down below:

AAA - AAA / BBBB / C / 001

(1) (2) (3) (4)

The number within the parenthesis may be explained as follows:

1 : Indicates the flow of information: From–To (Refer note A)

2 : Indicates Project No./Job No.

3 : Indicates type of correspondence (Refer note B)

4 : Indicates serial number of the message

Note A

Name of Agency (For example)		**Abbreviation**
Saipem S.P.A. H.O. (contractor)	:	SAH
Saipem S.P.A.Site (Contractor)	:	SAS
Shell Oil Co. H.O. (Client)	:	SOH
Shell Oil Co. Site (Client)	:	SOS
Bechtel H.O. (Consultant)	:	BLH
Bechtel Site (Consultant)	:	BLS

Note B

Letter to be indicated by	:	L
Fax messages to be indicated by	:	F
Documents transmittals by	:	DT
E-mail by	:	E

Numbering System

Units Identification

In any engineering project the different units are to be identified by specific unit numbers to be assigned by client/ consultant as per engineering design basis. For example, in refinery construction project, the different units may be identified as follows. This is just an example which may be applied for other projects as agreed by the client and the consultant.

Crude Distillation Unit	:	01
Vacuum Distillation Unit	:	02
Hydrogen Unit	:	03
Sulphur Recovery Unit	:	04
Delayed Cocker Unit	:	05
Hydrocracker Unit	:	06
Fluid Catalytic Cracker Unit	:	07
Oil Terminal	:	08
Captive Power Plant	:	09

Equipment Numbering

All the equipments of different units are to be identified and numbered by client/consultant as per basic engineering design basis. These equipment identification numbers are to be mentioned in the tender/contract document for ease of reference during both construction and production stage of the plant.

Instrument Tag Numbering

Each instrument must bear an individual tag number to indentify and separate itself from others. This numbering of instruments are to be provided by client/consultant as per basic engineering design basis and must reflect in the tender/contract documents.

Drawing Numbering for PFD and P&ID

All process flow diagram (PFD) and process and instrumentation diagram (P&ID) prepared by the contractor will be numbered in accordance with guide lines provided by the client/consultant in the tender/contract. One typical example is furnished below:

AAA – 6556 – BBB – XX – 0001

(1) (2) (3) (4) (5)

1 : Indicates identification code of contractor (if drawing made by SAIPEM, Head Office, then it may be indicated by SAH as outlined above).

2 : Indicates job number assigned by client/consultant

3 : Indicates discipline designation (prescribed below)

4 : Indicates unit no. (as per bid document)

5 : Indicates serial number

First Digit : "0" for PFD, "1" for P&ID, and "2" for PCD

Second Digit : "0" for size A0, "1" for size A1, so forth

Last Digits : Serial number starting from "01" for PFD and from "11" or P&ID

Discipline designation	**Suggested Code**
General	GEN
Process	PRO
Piping (General Arrangement)	MPL
Piping (Isometric)	ISO
A) Civil Engineering:	
RCC detailing	RCC
Any other layouts	GCL
Architectural	ARC
Structural	STR
Mechanical	MEL
Static equipments	MEE
Vessels	MEV
Package equipments	MEP
Rotating equipments	MER
Electrical engineering	ELE
Instrumentation and controls	INS
Miscellaneous	MIS

B) Sketches/Standards

All sketches to be prepared shall be numbered as follows:

AAA – 6556 – SK – 0001

(1) (2) (3) (4)

1: Indicates contractor's code

2: Indicates job number assigned by client/consultant

3: Indicates sketch/standard

4: Serial number for various discipline. Recommended numbering is as under:

0001–0100: Sketch/Standard Drawing for Tanks/Vessel

0101–0300: Sketch/Standard Drawing for Piping

0301–0500: Sketch/Standard Drawing for Instrument

0501–0700: Sketch/Standard Drawing for Electrical

0701–0900: Sketch/Standard Drawing for Structural

1901–2100: Sketch/Standard Drawing for Structural

2101–2300: Sketch/Standard Drawing for Civil

2301–2500: Sketch/Standard Drawing for Architectural

2501–2700: Sketch/Standard Drawing for Mechanical Drawing

2701–2900: Sketch/Standard Drawing for Electrical Drawing

2901–3100: Sketch/Standard Drawing for Instrument Drawing

3101–3300: Sketch/Standard Drawing for Flow Diagram

Numbering of Revisions

In the project, some documents, particularly drawings will need some changes from time to time to suit project site conditions. The status/revision of the document shall be indicated as shown below:

(Drawing Number) – 0 First Issue

(Drawing Number) – X Subsequent Revision starting from 1

Job Procedure Numbering System

The job procedure to be prepared by the contractor shall be numbered in accordance with the numbering system as described below:

AAA – 6556 –JP – X – 0001

(1) (2) (3) (4) (5)

1: Indicates contractor code

2: Indicates job no. assigned by client/consultant

3: Indicates job procedure

4: Indicates serial number for activities given below

G : For General

E : For Engineering

P : For Procurement

C : For Construction

5: Indicates serial number for various disciplines

0001–0100 : General

0101–0200 : Rotating Equipment

0201–0300 : Static Equipment

0301–0400 : Electrical

0401–0500 : Instrumentation

0501–0600 : Arch.

0601–0700 : Civil & S/STR

0701–0800 : Process

0801–0900 : Piping

0901–1000 : F/F & HVAC

Materials Control Documents

As explained above, when the materials are to be supplied by the contractor, the first document which is generated by the contractor is purchase order. In order to monitor the procurement status of the contractors, client/ consultant require the un-priced copy of the purchase order from the contractors for gathering information on whom the order has been placed and if the delivery schedule of the item is meeting the project schedule. As the number of contractors for a particular project may be many, so there should be some uniform documentation system. The numbering of purchase orders may be maintained in accordance with the following:

AAA – 6556 – BB – CCC – 0001

(1) (2) (3) (4) (5)

1 : Indicates contractor's code

2 : Indicates job no.

3 : Indicates source code:

If, Imported : May be represented by 10

If, Indigenous : May be represented by 20

4: Indicates discipline designation as mentioned below:

Discipline	**Code**
General	GEN
Pipes	PIP
Pipe flanges and fitting	PFT
Valves	PVL
Civil item	CVL
Fire fighting items	FF
Architectural	ARC
Structural	STR
Mechanical	MEL
Static equipments	MEE
Vessels	MEV
Package equipments	MEP
Rotating equipments	MER
Electrical engineering	ELE
Instrumentation and controls	INS
Miscellaneous	MIS

5 : Indicates serial number

In project construction site, it is customary for the contractor to inform client/consultant about arrival of materials at site. Such information may be communicated through the document as per the format given in Table 1. Where client is to supply the material to the contractor for construction work, the materials indent raised by the contractor and the materials issued by the client are to be properly recorded. Such documentation may be exchanged between client/consultant and the contractor in the format given in Table 2.

Table 1: Contractor Materials Supply Status

Document No.				: Date :	
Contract Package No.					
Client					
Consultant					
Contractor					
Sl.No.	**Item description**	**Total Qty. to be supplied as per Billing schedule**	**Qty. already received at site till date**	**Qty. received on date**	**Qty. balance to be supplied**
1	Civil construction items such as :				
	a) Steel plates				
	b) Steel Joist				
	c) Steel Angles				
2	Mechanical items such as :				
	a) Pipes				
	b) Valves				
	c) Flanges				
	d) Fittings				
	e) Static equipment				
	f) Rotating equipment				
	g) E.O.T.Cranes				
	h) Pressure vessels				
	i) Process equipment				
3	Electrical items such as:				
	a) Power cables				
	b) Control cables				
	c) Cable tray				
	d) Power Transformer				
	e) Control panel				
	f) MCB				
4	Instrumentation items such as :				
	a) Transmitor				
	b) Pressure gauge				
	c) Solenoid valve				
	d) Temperature gauge				
5	Construction consumables				
	Signature of Contractor :				

Table 2: Materials indent & issue by Client to Contractor

Document No. :					Date :		
Contract Package No. :							
Client :							
Consultant :							
Contractor :							
Sl.No.	**Item description**	**Total requirement as per billing schedule**	**Quantity issued till date**	**Quantity indented**	**Quantity issued on date**	**Cumulative quantity issued as on date**	**Quantity balance to be drawn w.r.t. billing schedule**
1	Civil construction items :						
	a)						
	b)						
	c)						
2	Mechanical items :						
	a)						
	b)						
	c)						
3	Electrical items :						
	a)						
	b)						
	c)						
Signature of Client/ Consultant :					Signature of Contractor :		

Design and Drawing Schedule

As regards design and engineering, the contractor will submit detailed drawing and document control list called document control index (DCI) to client/consultant based on the document/drawing numbering system mentioned above for approval after award of the contract. The client/ consultant will monitor the design and drawing work as per the approved DCI. The DCI shall cover the following information:

a) Name of work
b) Contractor identification
c) Name of client
d) Name of project management consultant
e) Documents/drawing number
f) Description of the document/drawing title
g) Category
h) Target date of submission
i) Status

The DCI shall be updated by the end of each week following the submission of further documents and on receipt of comments form PMC. This will be furnished to client/PMC along with monthly report for review.

The Format of DCI is shown in Table 3.

Table 3: Document Control Index

Document No. :	Date :
Contract Package No.	
Client :	
Consultant :	
Contractor :	

Review status code of Consultant/Client :	Progress category :	
Code 1: Approved with no comments	1 - Approved for construction	: 100%
Code 2: Approved with comments, requires further resubmission	2 - Resubmitted incorporating comments	: 90%
Code 3: Not conform to basic requirement,to be submitted taking care of comments for review	3 - Approved with comments	: 80%
R : Retained for information/records V : Void	4 - For first submission	: 50%

Sl.No.	Drawing Title	Drawing	Date of		Progress Achieved (%)	
		Number & Rev. No.	submission by contractor	Review status	Progress Category	Weighted Value
1	Architectural					
2	General Civil					
3	Structural					
4	Process					
5	Heat & Mass Transfer					
6	Pressure vessel/Tanks					
7	Rotating Equipment					
8	Package Equipment					
9	Mechanical & other Equipment					
10	Piping(GAD)					
11	Piping(Isometric)					
12	Electrical					
13	Instrumentation					

Signature of Contractor :

Material Control Index

Like DCI, the contractor is required to submit the MCI for the work package to client/consultant which will indicate the total list of package items, their ordering and delivery schedule. The MCI is also to be updated by end of each week and to be reviewed in weekly/monthly project coordination meeting for taking necessary corrective action to maintain the project schedule.

The format for MCI is shown in Table 4.

Document Control Procedures

1) This procedure outlines the submission of drawings to client/consultant by the contractor and the review of these project drawings and documents by client/ consultant.

2) All drawings and documents issued to contractor by client/consultant shall be forwarded with a document transmittal (DT) (format shown in Table 5). Similarly any drawing prepared by contractor shall be submitted to the

Table 4: Material Control Index(MCI)

Doc.No. : Date :
Contract Package No. :
Client :
Project Management Consultant :
Contractor :

Sl.No.	Item description	Value as per Billing Schedule	Schedule Date of submission			Weighted Average (%)		
			Rev. 0	Rev. 1	Rev. 2	Rev. 0	Rev. 1	Rev. 2

Signature of Contractor :

Table 5: Document Transmittal (From PMC/Client to Contractor)

DT No. : Date :
Contract Package No. :
Client :
From : PMC/Client
To : Name of contractor

Enclosed are following documents approved/not approved under the code mentioned against each for necessary action :

Sl. No.	Title of document	Document No.	Rev. No.	Status	Remarks
1				Code 1/2/3	
2				Code 1/2/3	
3				Code 1/2/3	
4				Code 1/2/3	
5				Code 1/2/3	

Signature of PMC/Client

Table 6: Document Transmittal (From Contractor to PMC/Client)

DT No. : Date :
Contract Pa ckage No. :
Client :
From : Name of contractor
To : PMC/Client
Enclosed are following documents under the code mentioned against each for your approval:

Sl. No.	Title of document	Document No.	Rev. No.	Status	Remarks
1				Code 1/2/3	
2				Code 1/2/3	
3				Code 1/2/3	
4				Code 1/2/3	
5				Code 1/2/3	

Signature of PMC/Client

Table 7: Documents distribution schedule

		Number of copies to be distributed to :			
Sl.No.	Type of document	Client, Head Office	Client, Site office	Consultant, Head office	Consultant, Site office
1	General correspondence a)Non-technical matter : b)Technical matter :	 1 1	 - 1	 1 1	 - 1
2	Drawings for construction work for a) Approval & review : b) construction and : final distribution	 DT only 2	 DT only 2	 4 2	 DT only 2
3	As built drawings	1	6	1	1
4	Vendor drawing	1	6	1	1
5	Vendor Data Sheet	1	6	1	1
8	Field records of installation	-	6	-	-
9	Spare parts list	-	6	-	-

client/consultant for approval vide document transmittal (format shown in Table 6) as mentioned above.

3) The contractor shall submit drawings and document to client/consultant for approval/review in accordance with the requirement laid down in the DCI and contract document. The documents after being reviewed shall be returned to the contractor vide document transmittal.

The contractor will deliver to client/consultant the drawings and documents as per agreed documents distribution schedule given in Table 7. Such schedule is required to be finalised in the kick off meeting between client and the contractor in the beginning of the contract execution

4) The client/consultant shall endeavour to return the drawing and/or documents submitted by the contractor along with comments, if any, to the contractor within stipulated time as agreed between the client and the contractor during the kick off meeting. Normally, the agreed time frame should not exceed seven days.

For distinct clarity, comments are to be written on the document in "Red" colour. Upon receipt of the comments, Contractor will take one of the following actions:

a) Revise the documents to incorporate the comments made in "code-3" and "code-2" and resubmit them for further approval. Comments against "code-1" will be regarded as "approved."

b) Notify client/consultant to discuss any disputed comments. Final decision will be made by mutual agreement.

For clear identification of the status of document categories, following comments as and where is required shall be stamped by the client/consultant on the first page of each document before same is being released:

a) Issued for Review/Comment

b) Issued for Approval

c) Approved for Construction

d) For information/Record

5) The review of progress of the design and engineering work is carried out as per project schedule by the client/consultant to remove the bottlenecks for the smooth execution of the project. The DCI prepared and updated by the Contractor becomes the basic document for review process.

Conclusion

There will be many contractors working in a construction project site. The flow of documents from client/consultant to different contractors will be many. So, it is desired to have some uniform documentation system for all contractors for smooth execution of the project. Moreover, the system described is based on the requirement of ISO 9001. Extensive help has been derived from the documentation process adopted by Engineers India Ltd who are the premier consultancy organisation in India for construction of refinery, petrochemical complex and pipelines while carrying out this research work. Moreover, potential contractors working in Panipat refinery project site in India for refinery expansion project were interviewed and consulted for gathering their practical experience and views to incorporate in this research work for making the system unique. The clients in both private and public sector, PMC and contractors may find extensive use of this DCS in project execution and with the fulfillment of guidelines of ISO 9001, the system may be applied for any global project site.

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A wise man will make more opportunities than he finds

— Francis Bacon

Feature

Overcoming Barriers to Total Quality Management's Success

Tushar N. Desai

During the past two decades, Total Quality Management (TQM) programs have been implemented in many organizations. The barriers to implementing TQM show up in all sectors—manufacturing, services, government, education, etc. Therefore, it is important for all organizations to understand and avoid these barriers both before and during TQM implementation. This article focuses on the barrier factors of TQM implementation and the causes of its failure that are common to all types of organizations and within all management levels , and discusses the ways and means to overcoming these barriers. The article also presents a model of TQM for its successful implementation, which incorporates the critical success factors of TQM, identification and overcoming the barrier factors of TQM implementation, managerial tools and techniques to overcome these barriers including the quality initiatives and performance measures. The ways and means to overcoming barriers described in this paper can be equally useful to the organizations going in for other quality initiatives.

Tushar N. Desai is an Associate Professor at Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat, India.

Introduction

Globalization and international trade, along with advances in information technology, have dramatically increased competition worldwide. The concept of TQM was developed as the result of intense global competition. Companies with international trade and global competition have paid considerable attention to TQM philosophies, tools, and techniques. The business units are forced to achieve world-class manufacturing capabilities in order to compete. TQM is one of the means to achieve the world class manufacturing capability. Quality management is a highly desired objective in the fiercely competitive international business world.

Contemporary strategic thinking is dominated by the central notion that superior business performance is the result of the successful implementation of TQM. TQM is applied the world over for attaining customer satisfaction, reliability, productivity, market share, profitability, and even survival, which are directly affected by the quality of an organization's products, services and performance (Mohanty and Lakhe, 1998).

What is TQM?

TQM has been defined in a variety of ways: a quest for excellence, creating the right attitudes and controls to make prevention possible and optimize customer satisfaction by increased efficiency and effectiveness.

Definition

TQM has been defined as "a management philosophy which seeks to integrate all organizational functions (marketing, finance, design, engineering, production, customer services...) to focus on meeting customer needs and organizational objectives (Juran and Godfrey, 1999). TQM

is the comprehensive essence of various proven quality improvement techniques, such as quality control (QC), quality assurance (QA), and total quality control (TQC). TQM, by combining these techniques under one umbrella, and shifting focus on customer, is designed to have overall operational effectiveness for sustainable and continuous improvements, beneficial to both, customers and suppliers (Desai and Desai, 2006). TQM is a circular concept, representing the fact that the lack of a single element can prevent the enterprise from moving successfully forward. In this sense, any area or individual can be the key to improving quality or leading to its decline (Chang, 2005).

TQM can be viewed as integration of two philosophies, i.e. total quality and quality management. Total quality is a long-term success strategy for an organization. Customer satisfaction, employee satisfaction, product quality in all its stages and continuous improvement and innovations are the main ingredients of total quality. Quality management is the way of working and managing that combines the capabilities of all employees for continuous improvements of every process with the objective of increasing customer satisfaction and hence competitiveness.

The organizations have already realized the significance of TQM and new quality improvement methods. Under the banner of quality, TQM has emerged as a revolutionary concept. Quality is the most significant factor in dealing with the critical issues of manufacturing and service organizations, which are productivity, cost of operations, profitability, etc.

TQM Philosophy

The TQM philosophy provides the overall concept that fosters continuous improvement in an organization. This philosophy stresses a systematic, integrated, consistent, organization—wide perspective involving everyone and everything. It focuses primarily on total satisfaction for both internal and external customers within a management environment that seeks continuous improvement of all systems and processes.

Barriers to TQM Implementation

The barriers to implementing TQM are seen in all sectors—manufacturing, services, government, and education. Therefore, it is important for all organizations to understand and eliminate these barriers both before and during TQM implementation.

Following are the signs of TQM efforts in trouble:

(i) Punishment for those who "do the right thing."

(ii) Strained working relationships (among peers, teams, union).

(iii) Competition of ownership of ideas.

(iv) Perceived inappropriate use of standards and recognition.

(v) No statistical logic and decisions.

(vi) Too many training that interferes with productivity.

(vii) Confusing quality teams and confused supervisors.

(viii) Lack of recognition and appreciation.

(ix) Poor commitment across the levels.

(x) Lack of shared vision and common understanding of quality.

(xi) Insufficient mechanism to overcome the hurdles of implementation.

(xii) Less understanding to bring about change in attitudes.

Sometimes many organizations adopt innovations in management in the hope of rapid painless change as well as legitimacy in the eyes of investors and the business community. From a change perspective, the adoption of TQM because other high-status companies have adopted TQM, becomes less effective. The senior managers who do so are not likely to be responding to problems defined by a rigorous analysis of barriers to higher performance in their own organizations. As a result they are likely to be launching change not with real conviction. In these kinds of organizations, TQM is measured by the number of quality teams, number of quality circles formed and people involved in them, but not by an honest assessment of how widely and effectively the organization and its leaders and employees are making TQM an integral part of their organizational unit's practice and culture. These individuals of the organization are not internally committed. Therefore TQM initiatives managed in this manner fail to be sustained.

Several factors account for the failure of the TQM effort in organizations.

Failures of TQM to persist are failures in implementation, not TQM theory and method (Beer, 2003). Biberman (1995) highlight that a major problem in implementing TQM is getting everyone in the organization to move in the same direction. Candido and Morris (2000)

describe TQM failure as the expression of differing desires, wants, needs and feelings at individual levels within the organization.

Moreno–Luzon (1993) reported on the problems focused in the attempt to develop a quality culture. Some of the difficulties are resistance to change, lack of experience in quality management, lack of resources, the prevalent quality system based on detection (that is, difficulty in moving to a prevention-based system), an emphasis on the short-term objectives, and the lack of strategies and overall objectives.

Lee and Oakes (1995) identified financial and technical resource constraints as being the main constraints plaguing small businesses. They described that organizations are not ready to start TQM journey and still they undertake TQM. The first phase should be an organizational readiness assessment prior to TQM implementation. The assessment of organizational readiness process would inform the organization about the scope of quality initiative. Atchison (1992) has also stressed the need for the organization in assessing its readiness to implement TQM. The pre-TQM factors such as educated workforce, resource availability, positive thinking, top management commitment, customer orientation, functional formalization, and mutual trust. These pre-TQM factors help to assess the organizational readiness to TQM and help in systematic implementation of TQM. They further explained that the assessment of pre-condition factors for TQM implementation helps in avoiding the wastage of resources which would have taken place if the organization had gone for TQM implementation without even satisfying the pre-condition factors.

TQM implementation failure has been attributed to two main barriers: The first barrier is in the organizational context such as, rigid organizational culture, inflexible and highly bureaucratic organizational structure and authoritarian management style, that is, the failures of TQM implementations are not due to external factors but in the failure of management to establish a proper system for its implementation (Shin et al., 1998; Wilkinson et al., 1998). This theory contends that often managers are not fully aware or perhaps ignore what it takes to implement TQM successfully and achieve high performance.

The second is the cultural barrier: TQM implementation involves a paradigm shift in management values and attitudes, and fit the culture of the firm (Sohal et al., 1998, Tata et al.; 1997). They further contend that TQM implementation failure is also attributed to cultural barrier, because TQM implementation involves a paradigm shift in management values and attributes, and fit into the culture of the firm, if it is to be implemented successfully. Further Trompenaars (1994) highlights that management values differ significantly across national cultures, management is culture specific and managerial practices, such as TQM, must be tailored to fit local culture. TQM failure is the expression of differing desires, wants, needs and feelings at individual levels within the organization (Candido and Morris, 2000).

Roger et al. (1994) proposed that managers who propose the idea for quality improvement are convinced that it works and assume that employees will think so too. In reality, however, this is not the case. Employees are more likely to draw their own inferences, for example, employees working in different parts of the same organization have different work related beliefs. They exhibit different perceptions, make different attributions and use different cognitive orientations.

Reasons offered for TQM's failure to improve performance include ineffective implementation (Griffin, 1988), lack of suitable corporate climate (Longenecker, 1993), poorly defined performance measurement (Brown, 1993), and lack of management support (Katz, 1993). Blackiston (1996) describes that some organizations choose the wrong strategy, the wrong tool or select merely one tool. Askoff (1992) refers to the lack of a systematic orientation and to the absence of strategic planning. The failures may occur when each unit is trying to improve performance independently to others. Radovilski et al., (1996) highlighted major TQM implementation problems with lack of management commitment, poor communication between departments and the campaign rather than a real, working system. Tamimi and Sebastianelli (1998) identified barriers such as management compensation.

Doyle (1992) highlights these factors as a lack of sufficient involvement and commitment of senior executives in the TQM efforts, limiting TQM implementation only to selected activities and not using it throughout the organization, expecting quick results, failure to accept the culture change required for successful implementation of TQM, not providing sufficient resources and budget, failure to empower individuals and teams, and failure to tailor the process to the specific situation

Shin et al., (1998) argues that TQM implementation failure is attributed to barriers such as rigid organizational culture, inflexible and highly bureaucratic organizational

structure in the organizational context and authoritarian management style. Therefore, they conclude that the failures of TQM implementation are not due to external factors but are due to failure of management to establish a proper system for its implementation. This perspective argues that often managers do not take into consideration, what it takes to implement TQM successfully and achieve high performance.

Evans and Lindsay (1996) describe two pitfalls as a change in the behaviors, processes and attitudes of employees and heightened expectations as they wait for some sort of miracle to happen. Shearer (1996) refers to the potential for empowerment causing some loss of control and Blackiston (1996) warns about over delegation by senior management, placing the workloads and should include both financial and non-financial measures.

Although many adherents praise TQM, others have identified significant costs and implementation obstacles (Kekale and Kekale, 1995; Powell, 1995). The critics are excessive retraining costs, consumption of inordinate amounts of management time, unrealistic employee commitment levels, emphasis on process over results, failure to address the needs of smaller concerns, service concerns on nonprofit concerns. The failures of TQM have been attributed to the preexistence of factors that conflict with TQM philosophy and practice. These include lack of cooperation and excessive time and financial commitments. Shortcomings of TQM or the reasons for its failure can be attributed to implementation problems (Roger et al., 1994). Reasons for friction or failure to implement a quality program may include a mismatch of organizational culture (Kekale and Kekale, 1995), a lack of management leadership, and inadequate training (Doyle, 1992).

Sohal and Terziovski (2000) have found that managers were looking for a quick-fix solution and they have learned very little from previous change initiatives. They identified obstacles impeded the adoption of quality management practices in Australian manufacturing as:

- Short-term vision of managers,
- Lack of understanding of the principles of TQM by managers,
- Benefits less than cost,
- Resistance by managers,
- Resistance by employees,
- Lack of government assistance, and
- Resistance by unions.

Reasons offered for TQM's failure to improve performance include ineffective implementation (Griffin, 1988), lack of suitable corporate climate (Longenecker, 1993), poorly defined performance measurement (Brown, 1993), and lack of management support (Katz, 1993).

Following 22 distinct barriers to TQM are common to all types of organizations and within all management levels.

Lack of management commitment

Organizations experience low employee participation and interest in their TQM programs when management commitment is missing at any level. Low participation by top management in quality improvement efforts can hinder TQM's successful implementation. TQM will not succeed if upper management is only motivated by outside pressure, such as needing to please the board of directors or meet an accrediting agency's standards. Management commitment means communicating the organization's philosophy from top down through actions.

Lack of awareness of quality at the management level

The amount of training is mainly focused on the personal development of the employees. Management in many cases does not know how to support the quality management practices. Therefore the personal development of managers is equally important as the employees. The managers in organizations need to be trained and educated to be effective leaders in the TQM journey.

Lack of vision

Vision provides a target and identifies opportunities that lie ahead. Realizing a vision requires shifting paradigms and making organizational changes. Vision provides direction (where the organization is going, and the action plan of how the organization expects to get there) and order (the organizational structure and systems needed to carry out action plans). Organizations expecting quality improvements need to adopt continuous improvements and remove status quo otherwise they lack vision and fail to make quality a part of their strategic plan. Their goals and priorities are not clear and the role of quality in the organization is often misunderstood.

Inability to change organizational culture

Changing a company's culture to reflect TQM is difficult and requires a lot of time. The fear of change must be

removed from the organization, company's focus must change from status quo, and poor labor–management relations must be resolved. Organization's employees need not be impatient and should not focus on the quick fix for obtaining results. The critical importance of employees' involvement in the quality process of an organization should be based on the belief that the best process innovation ideas come from the people actually doing the job.

Lack of continuous training and education

Training and education is an ongoing process that facilitates continuous quality improvement in any organization. Leaders involved in the TQM implementation should identify the training needs (for example, 7 QC tools, quality circles, advanced statistical techniques, communication skills, effective meeting skills, empowerment and leadership skills, etc.) of the employees and be creative in meeting those needs efficiently and cost-effectively. Informal training could include circulating articles on TQM or displaying information about TQM on company bulletin boards.

Improper planning

Another barrier is created by a lack of clarity in the implementation plan and the failure to promote open dialogue among the employees. Proper planning can overcome many implementation problems. The plan should remain flexible so that adjustments and improvements can be made as the culture evolves. A Gantt chart giving time frame should be developed and displayed in various sections so that everyone remains focused on TQM. Components of a successful TQM plan are:

- Obtaining company wide commitment.
- Communicating company vision, mission and goals.
- Providing open communication about the company's new focus.

Incompatible organizational structure and isolated individuals and departments

Autocratic organizational structure, management policies, mutual distrust, and unrest amongst individuals can lead to TQM implementation problems. Management by objectives (MBO), Hoshin planning, Quality Circles, change management, employee motivational and morale boosting programs, cordial interpersonal relationship building, teamwork, family get-togethers, etc., help in dissolving isolation of individuals and departments over time. Tools such as brainstorming, cause and effect diagrams, why-why analysis, workflow diagrams, TQM principles, etc., can be successful in identifying the discrepancies and misinterpretations that are often the root cause of the most longstanding turf battles that prevail in the organizations. If organizational structure is not satisfactory, then part of the planning process should be restructured with a defined purpose and explicit expected outcomes.

Ineffective measurement techniques and lack of access to data and results.

No measurement process, ineffective measurement techniques, improper maintenance of accurate and reliable data, insufficient access to data, etc., inhibit TQM process. Data are critical to decision making in a TQM culture. Key quality characteristics should be measured consistently so that reliable, comparative data are produced over time. Quality data such as cost of quality, defect, errors, scrap, etc., are used as tools to manage quality. Quality data, control charts etc. need to be displayed at employee work stations and should be available to managers, supervisors and all employees which is essential for aligning the workforce towards corporate expectations and TQM implementation.

Paying inadequate attention to internal and external customers.

Organizations must pay attention to both internal and external customers so that they can understand the needs and expectations of both types of customers from both perspectives. Quality should be customer driven. Employees must be aware of the concept of internal and external customers. There must be a focus on customer feedback and accordingly the process should be driven. The organization must evaluate customer satisfaction with internal performance objectives (for example, by comparisons with past customer satisfaction index or standard set).

Inadequate use of empowerment and teamwork

In order to make TQM a success, employees must demonstrate cooperative behavior and positive attitude working in a team. Complacency in teams will inhibit TQM process. In TQM setting delegation, teamwork, empowerment, and recognition are required to encourage the participation in the quality practices such as decision making, problem solving, and quality improvement. People must share responsibility for the success or failure of their

work. Whenever possible, teams' recommendations and solutions should be implemented. This creates significance of empowerment and teamwork amongst employees. Negative and passive attitude of employees toward management leads to inadequate employee involvement.

Inability to build a learning organization that provides for continuous improvement

Organizations need to emphasize continuous improvement of quality in all work processes. If unit heads and managers fail to assure active roles as facilitators of continuous improvement, coaches of new methods, mentors and leader of empowered employees, then it will inhibit TQM process. Continuous improvement is made possible by review of quality issues, providing feedback to employees on their quality performance, providing assessment and improvement of processes, practices and products/ services, using quality data to evaluate supervisor, employees and managerial performance.

Insufficient resources

Not committing sufficient resources account for the dissipation of the TQM effort.

Short-term focus or using a band-aid solution

Mangers looking for a quick fix move from one fad to another, from one gimmick to another, from one consultant to another, create nothing but chaos, wastages of organizational resources and organizational energy is scattered and employees lose faith in managerial commitment and integrity.

In congenial inter-personal relations

TQM process is inhibited if the atmosphere in the organization is not congenial to promote active interaction, and there is no mutual respect and faith among employees.

Improper communication across the organization

Ineffective communication cannot align the workforce toward corporate expectations, fails to hold together the bricks of total quality process supporting the principle of people-based management and ultimately creates barrier in TQM implementation.

Lack of customer focus

A misunderstanding of customer satisfaction, a lack of feeling for what drives customer loyalty, and an improvement in areas that add little or no value to the customer can also lead to TQM failure. To be successful the TQM effort must focus on understanding customer expectations and developing programs to meet and exceed them.

Lack of cost and benefit analysis

Many companies do not measure the costs of poor quality and benefits of improvement programs. Companies that measure quality costs often measure highly visible costs such as warranty, and easy-to-count costs such as training rupees or dollars or pounds, while they totally ignore relevant and critical costs such as cost of lost sales and customer defections. Companies also fail to measure the potential benefits of quality improvements. For example, many do not know the potential revenue lost due to customer defections or the revenue impact of improving customer loyalty. If the companies use higher levels of tolerance or lower order processing time that customer do not want, this simply adds cost but not generate additional revenue.

Organizational structure

No amount of TQM training will be helpful if the organization has layers of bureaucracy and functional barriers. Often TQM responsibility is delegated to mid-level managers, resulting in power struggles among quality teams. Successful companies maintain open communication lines, develop process understanding, and eliminate departmental barriers. Quality improvement gained through empowered cross-functional teams is more effective than improvement obtained through functional teams. Change efforts are successful when employees are given adequate understanding of the need for change, the nature of the change and the costs and benefits of the change.

TQM creating its own bureaucracy

Often the TQM efforts is delegated to a quality empire wherein quality becomes a parallel process, creating layers of new bureaucracy with its own rules, standards, and reporting staff., and having irrelevant quality reports becoming as routine practices and norms. Slowly this organization grows big, gets diffused, and becomes enormously complex with huge costs but no measurable results. Quality bureaucrats isolate themselves from day-to-day operations, give less importance to shop workers, sales personnel, maintenance people etc, and thus become a hindrance to quality improvements. Employees spend a great deal of time collecting data but no one has an idea in which direction one must proceed, every one

talking about continuous improvement and producing reports no one wants.

Lack of measurement or erroneous measurement

If an organization adopts erroneous indicators (or no indicators) to measure the performance of quality improvements, then this lead to TQM failure. Inappropriate measures encourage short-term performance at the expense of long-term performance and improve performance of one department at the expense of another. For example, purchase department purchases low grade components having lesser price (sacrificing price for quality) may improve the purchasing department's performance but it may create immense quality and scheduling problems for the manufacturing department. The organizations need benchmarks, that is, yardsticks of performance measures that are relevant and promote quality improvements. These include both process measures and results measures.

Inappropriate reward and recognition system

If the organizations do not reward their employees for their contribution to quality and do not have quick recognition system for outstanding performance by their employees, then this lead to decrease motivation of employees and hinder TQM process. These rewards and awards may not be purely financial. Behavior of employees is greatly influenced by recognition and reward systems. To make the TQM effort effective, organizations should recognize and reward the employees that perform well and help make quality improvements. The systems and policies that guide the compensation, rewards, and appraisals in organizations have tremendous potential to affect the culture of an organization. Incongruent appraisal system and reward system can lead to lack of trust in the organizations.

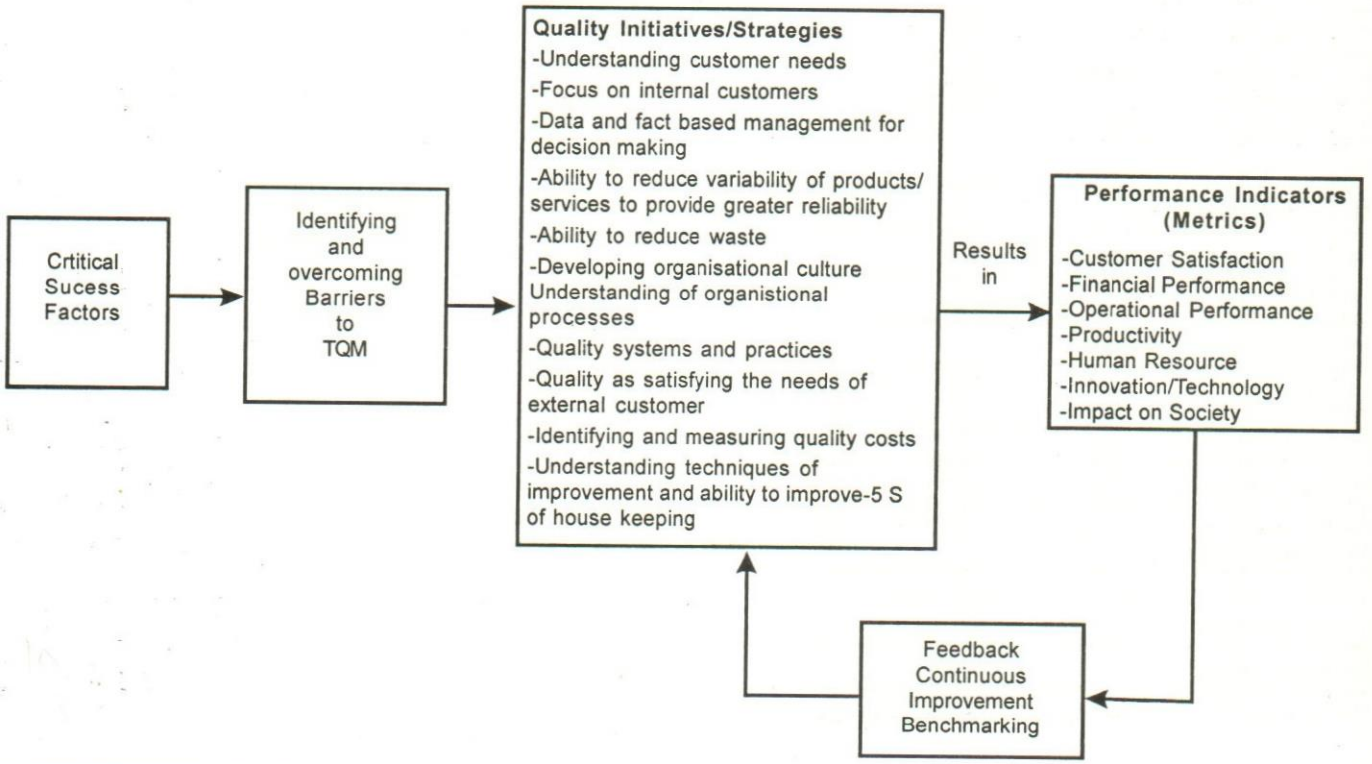
Accounting systems

Current accounting systems also contribute a great deal to TQM failure. Costs of scrap, rework, reprocessing, adjustments, etc., lose their visibility when changed to overheads accounts. Costs related to poor quality products, such as warranty, are not treated as product costs. Cost of loss of customer good will, customer dissatisfaction and lost sales are not reflected in the ledger, but it does impact the bottom line.

Model of Total Quality Management (TQM)

The model of TQM is shown in Figure 1. The starting point begins with defining the organization's manufacturing strategy and success factors. Overall understanding and

Figure 1: A Model of Total Quality Management



determination of the success factors is the first step in achieving successful implementation of TQM. The critical factors of TQM are the best practices or ways in which the organization and its employees undertake business activities in all key processes: leadership, planning, customers, community relation, production and supply of products and services, suppliers, benchmarking etc. TQM philosophy emphasizes that by effectively managing these critical components, the benefits such as lower cost, increased employee motivation and satisfaction, improved profitability, and improved reputation and market share will inevitably follow. Incorporation of these components or elements in TQM practices will help in adding value to the organizations seeking quality and productivity improvements and ultimately financial performance improvements. Management should use these CSFs to obtain a sharper understanding of the existing quality management practices and link them with the organizational performance measures. The CSFs provide a rational basis for resource allocation for productivity improvement.

Table 1: Critical Success factors of Total Quality management (TQM)

1	Top management leadership and commit ment
2	Corporate planning (strategic planning, mission, and policy)
3	Supervisory leadership
4	Public responsibility and citizenship
5	Strategy development
6	Strategy deployment
7	Customer and market focus
8	Management of customer relationships
9	Product /service quality
10	Process management
11	Quality tools
12	Employee training and education
13	Employee satisfaction
14	Employee empowerment
15	Teamwork (cross functional teams /team building approach)
16	Supplier management (TQM link with suppliers)(a) Supplier quality(b) Supplier relationships(c) Supplier involvement
17	Innovation and continuous improvement of processes
18	Recognition and reward system
19	Use of information technology (communication of information)
20	Zero defects
21	Organizational culture (corporate quality culture)

Table 1 exhibits various significant factors (critical success factors) of TQM. The quality initiatives/strategies to be adopted by the organization need to be evolved after a series of brainstorming sessions. Understanding and adopting measures to overcome the barriers to implementation of TQM is the next step. The TQM model presupposes that there is some system for performance measurement in place in the organization. A list of performance measures is given in Table 2. The system amply captures the performance on a variety of dimensions (both financial as well as non-financial).

Performance Measurement

Performance measurement is the process of quantifying the efficiency and effectiveness of action. Effectiveness refers to the extent to which customer requirements are met, and efficiency is a measure of how economically the organization's resources are utilized when providing a given level of customer satisfaction. A performance measure is a metric used to quantify the efficiency and/or effectiveness of an action.

A performance measurement system is the set of metrics used to quantify the efficiency and effectiveness of actions. The list of such performance measures is given Table 2. The next step is information and analysis, and benchmarking. Organizational performance and cost data are analyzed to identify and develop improvements. Customer–related/market data are examined to develop priorities for continuous improvement. Procedures are developed and followed to monitor key indicators. Information systems are developed that enable the online access and utilization of customer preference information. Benchmarking process is adopted to identify superior products, services, processes and practices that can be adopted into the organization to reduce costs, improve productivity and to provide greater satisfaction to customers on the continuous basis. Benchmarking process need to be adopted for motivating and stimulating company employees by continuously working for continuous improvement. The practice of measuring and comparing key aspects of the organization with those in other organizations need to be adopted to establish measures of relative performance, assist in setting new targets and discovering new ideas for improvement.

Following actions need to be implemented

Table 2: Performance Indicators

Performance Measures	Indicators
Customer Satisfaction	• Customer complaints • Customer retention • Overall satisfaction • Reliability and timely delivery of products/services (lead time) • Value for the money spent • Quality
Financial Performance	• Return on investment (ROI) • Sales growth • Profit growth • Market share • Market share growth • Inventory margins • Product turnover • Revenue • Expenses
Operational Performance	• Quantity of work • Quality of work • Flexibility • Receptivity • Dependability • Work attitude
Inventory Management Performance	• Purchased material turnover • Total inventory turnover
Human Resource Results	• Employee satisfaction • Employee turnover rate • Employee absenteeism • Employee job performance • Suggestions received • Employee morale • Employee commitment • Multi-skilled workforce • Labour efficiency • Safety/health
Competitive Advantage	• Unit cost of manufacturing • Fast delivery • Flexibility to change volume • Inventory turnover • Cycle time (from receipt of raw materials to shipment) • Overall competitive position

Continuation of Table 2.....

Performance Measures	Indicators
Organizational Effectiveness	● Cost ● Product/service quality ● Productivity ● Cycle times
	● Number of errors or defects (defects as a percentage of production volume) ● Supplier performance ● Customer satisfaction ● Warranty claims costs as percentage of total sales
Productivity	● People productivity ● Material productivity ● Energy productivity ● Machine and equipment productivity
Innovation / Technology	● The number of successful new product/service innovations ● Emerging technology ● Cycle time (product introduction, research and development)
Quality Performance (Performance Quality)	● Product/service quality ● Average percentage of items defective o Cost of quality (as percent of sales) o Scrapo Reworko Inspection o Training and development o Returns and warranty o Total costs of quality ● Delivery lead–time of purchased materials ● Delivery lead–time of finished products/services to customers ● Waste reduction
Impact on Society	● Safety of worker ● Safety of the environment ● Response to culture change ● Improvement towards quality of work life ● Economic advantage

(i) Senior management at the corporate and unit level need to develop commitment to TQM through an effective dialogue about why the company should adopt TQM and agreement about what must be done to implement TQM.

(ii) Senior management need to follow up their initial commitment with changes in organizational arrangements (a cross-functional team-based organization) and behavior (the behavior of their own and subunit leaders) needed to support their TQM intentions.

(iii) The senior managers and middle-level managers should create an honest organization-wide conversation about the effectiveness of TQM implementation from which they can learn about the quality of their leadership in moving change along.

(iv) The managerial capabilities described above must exit in all sections of the organization for successful TQM transformation to take place.

(v) For long-terms success the organization need to consider how financial gains from improvements are going to be allocated so that employee commitment can be sustained.

(vi) These managerial capabilities constitute the "fertile managerial soil" essential for the "TQM seed" to take root, grow and become part of the organization's fabric.

Conclusion

Quality improvement efforts fail for a variety of reasons, all of which can be tackled. If the organization fails to gain benefits from TQM efforts, the organization need not to abandon quality programs. The organization should properly plan and execute quality improvement programs to derive benefits. If the employees are unhappy with the TQM progress, then they need to monitor whether they are missing the necessary ingredients. If improvements are not measurable in a year or two, it is highly likely that the organization may on the wrong track.

Organizations with successful TQM programs develop quality vision, make quality a part of strategic planning, establish goals for customer satisfaction, communicate quality environment of mutual trust, confidence and respect, measure both tangible and intangible costs and benefits, and restructure their reward system. In these organizations, cross-functional teams and continuous improvements become the norm, and competitiveness improves along with market share and profits. TQM is a key ingredient to achieve excellence in quality and productivity.

Quality comes mainly from people as a result of attitudes and values and not by technology alone. TQM drive aims at attitudinal change, hence TQM promises change in organizational culture. The attitudes, beliefs and values of the workers and the managers influence the organizational culture, which affects the success of the change program.

To make TQM work, the following efforts need to be attempted:

- Aligning structure and systems with TQM culture.
- Transformation of mindset of individual both at managerial levels and at workmen level, through value-building exercise and clarifying personal beliefs and values of individuals.
- Managing organizational dynamics to keep the activities of politics, bureaucracy and power games away from the organization, by empowering the employees.
- Managing the change to ensure smooth shift.
- Expanding TQM arena beyond the boundaries of organization—to the families, communities and society, to make it a way of life.

Implementing TQM is a long-drawn process. It has no shortcuts. Patience and perseverance are the key words in TQM implementation.

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The man of virtue makes the difficulty to be overcome his first business, and success only a subsequent consideration

—Confucius

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