Chapter 7

Empirical Study (Questionnaire Survey)

Introduction

It is well-established that the DRDO labs are primarily project oriented, but performance drivers and "man behind the machine", i.e. "human capital" are an important driving force. The various aspects of HR and project/technology aspects have been studied in this chapter by questionnaire. The various questions cover different aspects of work-culture, training and development, leadership styles, organizational matrix and performance excellence.

The questionnaires have been set on preliminary data, and interviews been on primary and secondary data collection. The questions-set has also formulated that they bring out the salient ingredients of an organization and main core competence/strengths and bottlenecks in all aspects. Questionnaire is "primarily a collection of questions that fit the research themes and its objectives, and the answers to which will provide necessary data for testing hypothesis/propositions formulated for the study" (Kothari, 1985).

Also, questionnaire means, "a set of questions developed in an organized and orderly fashion for gaining information from the people in order to a given problem" (Thakur, 1993). Herein, the questions are
to generally, HR functions and cultural aspects and bring out the
following traits/ingredients.

- HRM measures
- Organizational structures
- Technological developments/managements
- Acceptance of change
- Performance level
- Specialization
- Standardization
- Formulation
- Training and development
- Performance level
- Specialization
- Standardization
- Formulation
- Training and development
- Decentralization
- Delegation
- Participation
- Leadership styles
- Cultural characteristics
- Flexibility in HRM as well as technology and its management

Eventually the questionnaires deal with and bring out the flexibility
and HR performance drivers of the DRDO labs. Along with flexibility
we get into R&D labs of DRDO about the structure and cultural
characteristics and the environment obtaining are fathomed/analyzed. The
question sets were dispatched to most of important labs of DRDO.
...ing in mind their wide regional functionality and representative geological yardsticks. The data apart from this were personally also collected by personal interactions. This was a tough job altogether. Thus, the data were gathered/analyzed from diverse types of fields and different laboratories. The questionnaire-set (a sample) has been attached at the Appendix 'E' of this thesis.

Apart from general questionnaire, one set of questionnaires were also made for bringing out Balanced Score Card (BSC) study of one of the lab. This questionnaire set is also attached at Appendix 'D'. Its brief analysis is presented in the present chapter. The various ingredients have been placed and suitably presented in the succeeding paragraphs for all the considered in chapter five.

This chapter presents questionnaire analysis validation techniques and synthesis under six propositions. Finally, the results have been summarized in tabular form wherein about 34 parameters/characteristics have been brought out with their ratings in percent form for further comparative analysis.

Sample Size

For Defence R&D Organization, there are about 50 laboratories (labs, in short or establishments). The questionnaire set was sent to 35 representative labs of DRDO, out of which the duly filled up questionnaire
received from 30 labs. Almost from every lab, about three to four
officers including Directors, were contacted and the questionnaire
was explained for doing the needful.

Nearly 76 questions (mainly to bring out HR functions) were
delivered to every lab with a request to add their any specific point or case
which might not have been covered in the questionnaire. Researcher,
almost personally went to around 15-16 DRDO labs and had not only
visited Directors and other senior/key personnel but had a meeting to explain
questions and what is required to be brought out.

The received the duly completed questionnaire format at an average of
respondents per unit or lab. This gave a sample-size of 105 respondents.

From this following measures were also taken for cross-checking/
examining of questionnaire and their replies from respondents.

Senior officers/key personnel coming to various courses at ITM cross
checked about working of their labs.

In other DRDO meetings at HQs or in other regional locations, the
main-thrust points of the questionnaire-study was further clarified/
addressed.

For any clarification, or reminders telephonic communication, fax and
Diona' network was used.

Various officers of ITM going to other DRDO labs for conducting the
training courses also explained the points and did the needful.
Once the questionnaires were received they were analyzed by data analysis. The outcome of the questionnaires are suitably classified in this chapter under requisite main designed themes and also a variety of main ingredients and allied traits emerging out are depicted.

**Validation of Questionnaire**

Validity of a questionnaire refers to the degree to which we are “measuring what we think are measuring” (Kerlinger, 1973). Insufficient validity means research error when the research design is not able to accomplish what is intended to be done. And, high degree of validity reflects the accurate estimation to the real value.

**Face Validity**

Refers to the degree of fit between researcher’s perception and the face of the variables, which are operationalized through the questionnaire. The operational definition looks on the face of the questionnaire as though, it measures the concept under study. Experts were taken for establishing their viewpoints, wordings and definitions. The final validity was done through number of validation after revision/refining of the questions.

**Criterion Related Validity**

Criterion related validity refers to the degree to which the measurements of the questionnaire are meaningfully related to the objectives of the
This validation was also done with active involvement of the experts and language/wording of the questions were corrected/refined.

**Content Validity**

Content validation is guided by the question. "Is the content of this measure representative of the content, or the universe of content of the property measured?" (Kerlinger, 1973). Content validation is essentially mental. The experts examined the content of the questions with a view to variability and objectivity. Re-sequencing of the questions also may be done by the experts. Accordingly, the questions are revised/refined to meet above two aspects, i.e. variables and objectivity.

**Testing of Questionnaire**

Completion of questionnaire validation it was subjected to pre-testing on a small sample of respondents (12). The pre-testing respondents were selected from the same population from which actual survey is taken (Thakur, 1993). The object of the pre-testing was to ensure easy understandability, and eliminating any confusion or misunderstanding.

**Differentiation and Organizational Capabilities**

Differentiation covers personnel training, career planning and their aspects. These are given as under:
Training and Education

A separate HRD-Cell, has been created/established in every lab which later entire labs training, education and its development. For this area Directorate of HRD has been established at the DRDO HQs, (New for coordinating the efforts of HRD Cells of all the labs. This certainly improved the various HR functions and man-power development aspects of leadership, participative working in mission mode culture. Values, candour, delegation techniques of people has also been, suggested by Jack Welch for passionate work culture. These all are in consonance with rapid change creation, collaboration with strategy and building new capabilities for the future, suggested by Great Author, Prahalad (Prahalad et. al 2004). All are also very rightly advised by Eli Goldratt in his work Goal critical chain (2005, Indian Edition) and Abdul Kalam et al. (2005) in book 'Mission India'.

HRD-training and development, has taught people customer-value-creation of values, co-creation of experience, experience-mentoring, experience-learning and Balancing Flexibility and stability. Continual-problem solving, flexible experience learning and information, are now the back-bone of any organization (Prahalad 2004) and so is the case with various labs of DRDO.

Majority of employees, around 80 per cent responded positively to use training by DRDO labs. 60 per cent of employees feel that training
Easy help develop their skills, which is the requirement for
keeping competitiveness in the business field, 53 per cent of the
respondents agree that employees get education leave with or without pay.
About 60 per cent of the respondents are of the view that external
courses are highly effective and about 27 per cent show great
interest to take these courses/training (Ref. Table 7.1).

Table 7.1: Training and Development

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>New technology learning</td>
<td>80%</td>
</tr>
<tr>
<td>Quality improvement (skills)</td>
<td>60%</td>
</tr>
<tr>
<td>Education leave</td>
<td>53%</td>
</tr>
<tr>
<td>Leadership development</td>
<td>33%</td>
</tr>
<tr>
<td>Promotion chances</td>
<td>63%</td>
</tr>
<tr>
<td>Great willingness to courses</td>
<td>27%</td>
</tr>
</tbody>
</table>

It is observed that proper training, education and development
paves the flexible potential for individual co-creation of experience
and other HR determinants. This is one of the area where DRDO
effectively using their flexibility potential.

Career Planning

Planning is one of the most important task of the HRD cells which
are created, lately in the DRDO. Scientists and staff, also work and
are prospects. Around 45 per cent of the respondents agree that
there is a system of internal career planning as shown in the Table 7.2
and others have the mixed feedback given in the table. There is a
Table 7.2: Career Planning

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Very little</td>
<td>13%</td>
</tr>
<tr>
<td>Something</td>
<td>45%</td>
</tr>
<tr>
<td>Systematic</td>
<td>25%</td>
</tr>
<tr>
<td>Very systematic</td>
<td>07%</td>
</tr>
</tbody>
</table>

R&D's HRM/HRD policy can look into this aspect for improvement in bringing transparency in career prospects and their active participation in various activities for improving the existing system.

Nearly 67 per cent respondents feel that there is no systematic training of scientists and staff for better understanding the organization a need for continuous enhancement of the projects and role of the organization.

Compensation Management

With the commencement of Fifth Pay Commission, the pay-structure of all employees, all over, has improved, which ensures better satisfaction among employees. It is but human, that people work better with incentives and push with creating sense of urgency of the work.
Looking after the career planning and future prospects of the people ideally help in routine tasks. This aspect in today's competitive world has gained more importance for enhanced performance of the personnel.

Cultural Acceptance and Customer Satisfaction

Cultural acceptance of change and customer satisfaction are few very vital elements of HR functions. From the study the following are given for this theme.

1. Crisis Management

As management, otherwise for any project work or organizing a function utmost short notice was found quite good (80 per cent). This is a very big point for DRDO labs. Crisis management is rather another dominant form of flexibility adaptability or continuity. Crisis managers are good example.

2. Depth of Varied Technological Tasks

More than 70 per cent of the respondents believe that labs have richly varied variety of tasks, which is distinctly depicted at Table 7.3.

Table 7.3: Varied Technological Tasks

<table>
<thead>
<tr>
<th>Type</th>
<th>Per cent of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richly varied</td>
<td>70%</td>
</tr>
<tr>
<td>Relatively monotonous</td>
<td>21%</td>
</tr>
</tbody>
</table>
Standardization

70 per cent of respondents have observed that standardization is practiced in DRDO labs, and 60 per cent asserts that use of standardization (i.e. Standard Operating Procedure, or so) is practiced. This is a positive aspect of time-management. It can be used for the process and output. It can also be commented that too much standardization also curbs flexibility adaptability.

Coordination

63 per cent of the respondents asserted about coordination of the tasks in the sub-activities of the labs internally by mutual adjustment. There were of somewhat different opinion. However, during crisis management all people unite invariably and the task success whole-heartedly, whether it is event-management or ideology management. Coordination is further helped by an effective and efficient communication system.

Tolerance for Ambiguity

Tolerance slowly is decreasing down as the focused-work-culture is prevailing. More than 50 per cent respondents agree that they share the relationship, while 37 per cent are of the viewpoint that there is a collaborative relationship between the colleagues. New and innovative ideas have cropped up within the labs as suggested by the responses of 87 per cent respondents. With the young and energetic scientists intake, 90 per
respondents feel that scientists welcome in new ideas, adopt through technologies using CAD/CAM and other modern techniques.

Accreditation by ISO organizations/standards (ISO: 9000:2000) establishments are working with rather standard operating procedure (SOP) standardized norms and results are high quality products/services.

**Focus on Constraints**

After this, 'organizational structure', 'decision-making' and 'self management' have been covered which are considered as constraints in the

**Organizational Structure**

It is observed that the basic organizational form can be measured by having organization structure, clusters or groupings and levels of hierarchy. According to respondents labs have functional organizational structure. Further, it is supported by majority of respondents, that around per cent agrees that positions are clustered on functional basis. (Refer Table 7.4).

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Per cent of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional</td>
<td>53%</td>
</tr>
<tr>
<td>Divisional</td>
<td>30%</td>
</tr>
<tr>
<td>Matrix</td>
<td>17%</td>
</tr>
</tbody>
</table>

However, day by day matrix from of structure, is increasing as it is served that 'flexibility potential' decreases in the case of functional
groupings. And, further such a grouping can’t respond quickly to any changes. Product service groupings relatively provide possibility of quick reaction to any changes in the environment/technology. Also, the complex job being performed, by DRDO labs may need use of more than one type of groupings.

The work-culture and the various propositions envisaged herein works towards more flexible organizations. Matrix type, however conforms more towards the formulated propositions in the present work.

2. Decision-Making

Undoubtedly, the two most dominant factors which help and enhance the organizational potential are decision-making and communications. Today, many advanced techniques of decision-making are available. The top-management and the middle level managers must take prompt-decision and manage time.

Some of the techniques of decision-making are brain-storming and Nominal Group Technique) and linear programming etc. DRDO, now sets technical project, of shorter terms (2 to 5 years), as longer projects entail in getting the products at a vary late stage (in 10 to 15 years) the technology may be obsolete by that time. Thus, short-term projects, fast decisions at very critical stages. This will further save time cost run situations.
Results observed from the questionnaires, herein, majority of the respondents, i.e. 67 per cent feel that decision-making in labs is centralized. Only 30 per cent of the respondents feel about decentralized decision-making. Although in centralized decision-making, still decision are reach through consensus decision driving as indicated by 73 per cent respondents. It will be further observed that though the flexibility potential is when decentralized form of decision-making but DRDO labs still enjoys the flexibility inspite of the fact that decision-making in DRDO labs are centralized. This has been made possible by the fact that DRDO has negated (suppressed) the effect of centralized decision-making to quite an extent by consensus decision-making which provide them enough flexibility.

**Self-Management**

Peter Drucker (2002), managing oneself and finding own strength and weakness and performing to maximum are important parameters for work- life. Values system, co-creation of values, belongingness and relevance-learning environment etc. are further corporate governance constituents.

Any level of management, starts with self-management invariably. Megginson (2002) also suggests self management and self-motussing. In self-motussing, there is a mode of grooming, i.e. a person taking responsibility to groom and develop self. Self-motussing Person uses multiple techniques like self-refilling, self-analysis, reflection seeking feedback and conselling,
ing diary etc. Finally, self-lotussing person themselves strive hard and
herself towards achieving excellence.

As per respondents feedback and having started a HRD cell in the
40 labs, people have been exposed to these dimensions. It is part of
ng and development and awareness of this dimension has started in
RDOLabs.

Passionate Attitude and Belongingness

ide is one single-most dominant factor for improvement of work-
we. In this section, the various components has been taken in the
ed paragraphs.

Management Attitude

per cent of the respondents feel labs are using procedure of urgency
ority as a management technique and other 43 per cent feel labs uses
cedures standard operating procedure (SOP) and activities.
agement is reasonably willing to use new management techniques as
8 per cent opinion of the respondents.

RDOLabs are open to new things which provide some flexibility to
But at the same time, some fixed procedures attitude of urgency and
ly rules also does not provide any further flexibility in the system.
Lab should have to move to improvisation management attitude to
ce flexibility in DRDO labs.

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Planning Attitude

By three per cent scientists reveal that dominant attitude in the labs is active and 17 per cent feel it is interactive. The young scientists are also showing good potential and are quite pro-active.

This planning attitude prevalent in the DRDO labs provide them a fillip impetus to a higher flexibility.

Emerging Framework for Governance in the Organizations

Natural mechanism and business processes provide the back bone and vitality of the organizations/companies. But providing a flexible-suitable to creative growth of the companies remains a question-mark in the formal organization in response to emerging opportunities and highly decentralized environment.

Today, the customers or consumers’ role in co-creating values distinctly make them part of the organizations. In this regards strategic and operational boundaries now redefine the firms. The nodal organizations with extended network is an operational and strategic entity, subject to constant re-evaluation and redefinition. The supplier and firm relationships are flexible, and the boundaries of the network are also ‘flexible and organic’ work-culture based. Thus, it will be observed that corporate governance process eventually is a judicious mix of three elements: formal structure, business processes, and management, disciplines and protocols are critical building blocks of this thought-prices.
Herein, from the questionnaire it is found that majority of the scientists feel that DRDO is sensitive to external development 60 per cent of students feel that DRDO is technology-oriented and 40 per cent of the scientists reckon it as product-driven.

The response to the effect of external climate under which laboratories are functioning is given at Table 7.5 below:

Table 7.5: External Climate

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardly changeable</td>
<td>20%</td>
</tr>
<tr>
<td>Rather changeable</td>
<td>47%</td>
</tr>
<tr>
<td>Changeable</td>
<td>23%</td>
</tr>
<tr>
<td>Very changeable</td>
<td>06%</td>
</tr>
</tbody>
</table>

4. **Focus–Long Term Planning**

Observed that DRDO labs primary focus is long-term as indicated by 57 per cent responses for this option. Working on focused way and with a positive work-culture enhances flexibility with optimum timeframe. It is thereby encouraging that a committed work-culture overall in the labs is being presently.

5. **Belongingness or Esprit-de-corps**

DRDO has developed a culture of belongingness and esprit-de-corps. Rather than being a form of organizational belongingness is fast developing. This is also due to the measures and security/welfare considerations of the personnel working in the DRDO.

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Approximately 70 per cent respondents seem to be satisfied with their
and around 70 per cent respondents feel sense of belongingness to the
77 per cent respondents put organizational esteem above their self-
em as shown in the Figure 7.1 below.

![Diagram showing 77% Yes and 23% No]

Figure 7.1: Organizations Esteem Vs Self-Esteem

**Participation in Control Activity**

And 70 per cent of the respondents feel that goals, planning and control
activities are participative as shown in the Table 7.6 below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very exclusively</td>
<td>17%</td>
</tr>
<tr>
<td>Very participative</td>
<td>70%</td>
</tr>
</tbody>
</table>

67 per cent respondents indicate that labs have their grievances
mechanism existing and only 53 per cent vouch for the effectiveness
mechanism.

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Delegation, decentralization, empowerment etc. also are in vogue in DRDO labs and people, work in generally in efficient manner. In this regard, the matrix form of organizational structure help the lab working.

**Flexibility and Continuity**

This is the core theme of the study. This encompasses primarily all stages’ and interchangeability, flexibility in HRM, communications etc. These are given in the succeeding paragraphs.

**Continuity Management**

Continuity management has been discussed in Chapter three briefly. Getting the right number of people for various tasks is a major task of organization. Over the wastivity rate more or less we get new scientists/staff as placement. However, the skilled people going on retirements or other reasons of wastivity, create a more substantial gap. Somewhere a downsizing took place and a particular lab was entrusted more responsibility.

Also, as per policy of DRDO, various cells (small HQs type organizations at micro levels-who work/coordinate the labs tasks with DRDO) were closed/or minimized. Continuity management is a short-term of knowledge continuity management’ and is highly flexible (Hamilton et al., 2010). It has strong links with talent search.
2 Successional Planning

was found very poorly organized for top-level management, i.e.

actors, of the DRDO labs mostly. The feedback of questionnaires were in

ar of succession-planning was something 1/3 (03 per cent) to 2/3rd (67

cent) were lacking in the planning. This is one of the weaker link of

0, which should be focused more.

3 Interchangeability

evident from the responses, 10 per cent of the respondents feel that

is no interchangeability and another 73 per cent agree to low rate of

changeability. The arguments are well supported by the data Tables 7.7

7.8.

Table 7.7: Employees Interchangeability

<table>
<thead>
<tr>
<th>Type</th>
<th>per cent (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No interchangeability</td>
<td>10%</td>
</tr>
<tr>
<td>Low interchangeability</td>
<td>73%</td>
</tr>
<tr>
<td>High interchangeability</td>
<td>10%</td>
</tr>
<tr>
<td>Complete interchangeability</td>
<td>03%</td>
</tr>
</tbody>
</table>

Table 7.8: Employees Switching to Other Jobs

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>50%</td>
</tr>
<tr>
<td>Very Often</td>
<td>30%</td>
</tr>
<tr>
<td>Very Easily</td>
<td>20%</td>
</tr>
</tbody>
</table>

With low or no interchangeability the flexibility potential of the

izations becomes low. DRDO labs should adopt more interchangeability
m as this will enhance the flexibility. Low interchangeability in the DRDO exists as per the response received from the respondents.

4 Organizational Changes

There have been substantial organizational changes during these years as indicated from the responses. These changes are due to the breakthrough technologies, human skills, knowledge workers, IT enabled services etc.

Table 7.9 shows objectives of these organizational changes as stated by the respondents:

<table>
<thead>
<tr>
<th>Type/Item</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness of work</td>
<td>30%</td>
</tr>
<tr>
<td>Breakthrough technologies</td>
<td>48%</td>
</tr>
<tr>
<td>New knowledge</td>
<td>43%</td>
</tr>
<tr>
<td>Continuous development in products/services</td>
<td>44%</td>
</tr>
<tr>
<td>Cooperation/coordination</td>
<td>43%</td>
</tr>
<tr>
<td>Co-creative shared values</td>
<td>50%</td>
</tr>
<tr>
<td>Values/learning environment</td>
<td>45%</td>
</tr>
</tbody>
</table>

5 Cultural Change

Long these recent years a distinct paradigm shift is being observed and the scientists feel proud in working as scientists in DRDO establishments. The management also support juniors for their new ideas and intrapreneurship of work. Also, a reward system every year to young and senior scientists, acknowledging their efforts for execution of the projects successfully, impart much needed boost to their morale. Other forms of
Compensation management are also being practiced in the DRDO labs. More than 70 per cent scientists feel satisfied in this regards.

3.6 Leadership Style

Leadership and its functioning style play a vital role in creating positive and encouraging shared values as well as adequate motivational efforts which enhances the flexibility aspect in the organizations. Mostly, in DRDO labs the leaders use participative style though this has low flexibility potential. The latter and progressive leadership style, encompassing more ingredients of flexibility aspects is delegative, empowerment and decentralization types.

About 57 per cent of the respondents feel that they use participative style of leadership and is good—but it is average type of leadership. Table 3.10 depicts some of the results.

Table 7.10: Different Type of Leadership

<table>
<thead>
<tr>
<th>Style</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task-oriented</td>
<td>30%</td>
</tr>
<tr>
<td>Instructive</td>
<td>27%</td>
</tr>
<tr>
<td>Relation-oriented</td>
<td>15%</td>
</tr>
<tr>
<td>Consultative</td>
<td>13%</td>
</tr>
<tr>
<td>Delegation/empowerment</td>
<td>15%</td>
</tr>
<tr>
<td>Participative</td>
<td>57%</td>
</tr>
<tr>
<td>Combination of one or more</td>
<td>47%</td>
</tr>
</tbody>
</table>

3.7 Flexibility and HRM Potential

Flexibility (and its manifestations) is the singlemost dominant factor for enhancing effectiveness of an organization. Flexibility, teamwork, continual problem solving constant-searching for process-improvements and
Innovation with vendors/suppliers are some vital parameters in a project-based labs. Alongwith flexibility, accountability for performance is still a necessity (Prahalad et al, 2004). Sacrificing accountability cannot be the price for flexibility, collaboration, and team work. Thus, balancing flexibility and accountability are critical, but it is to be remembered that today's business is not linear-it works and functions more on non-linear fashion.

Simply the modern flexibility norms recommend building a 'new vision of corporate governance'. Herein, we have to work under formal structure, systemic process protocol and discipline, strategic and flexible functional boundaries of network.

70 per cent of the respondents agree that lab uses flexibility norms in project management. Also, around 57 per cent respondents seem to be happy with overall HRM activities of the lab.

**Communications**

As observed earlier, communication is also most important factor like decision-making for the organizational effectiveness. With the advanced IT enabled services, breakthrough technology and sound financial back-up of 10 labs, communications internally as well as externally are very effective in the DRDO establishments.

It can be observed that from the respondents feedback that communications are main strength of the DRDO organizations 83 per cent respondents agree to that.
The other form of interactions, like centralizations, decentralization, co-operation etc. are already covered in the paragraph # 7.23 decision-making. As per (Drucker, 2000) it is a core principle for any organizational effectiveness.

**Discipline of Execution-Performance Excellence**

The whole crux of study is the performance, professionalism and productivity. The various aspects of these determinants have been covered in this section.

It is observed that a person or an organization is guided by its performance and this factor helps in culminating into quality product/service provision. The system should be so geared that the results are achieved with no hindrances. Discipline of execution, has been propagated by Bossidy, Cady et. al, 2002) and making it happen has been suggested by Hammer (2009) as well. It is primarily manifestations of EQ (emotional intelligence), spiritual quotient and XQ—execution quotient. The XQ—which bridges the gap between setting a goal and actually achieving it.

On the Balance Score Card norm (proposition, P-6) XQ score brings out leading indicators, which tell about future course of actions, and is rather the most dominant factor for High Performance work system (HPWS).

Today, the technological advancement and IT-enabled services capability and good communications enhance the capability and potential of
organization. The intake of fresh and young vibrant scientists, the
variables have been immensely improved. The quality products/services
are being ensured with the standardized working norms.

The HRM/HRD focus in DRDO, many incentives, young scientists,
ards, project awards, overall establishment awards and other forms of
pensation management have improved the products/services quality and
the work-culture environment has suggested many dynamic Jack Welch,
4 HR functions and performance determinants for improving work-
ure.

The feedback from majority of the respondents (83 per cent) agree to
fact that there exist a performance assessment system. More than 60
cent of the respondents feel that performance assessment discussions
either functional or sometime functional or worthwhile etc. as shown in
7.11:

Table 7.11: Performance Assessment

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formality</td>
<td>10%</td>
</tr>
<tr>
<td>Hardly</td>
<td>15%</td>
</tr>
<tr>
<td>Worthwhile</td>
<td>23%</td>
</tr>
<tr>
<td>Functional</td>
<td>30%</td>
</tr>
<tr>
<td>Sometime functional</td>
<td>13%</td>
</tr>
<tr>
<td>Very functional</td>
<td>05%</td>
</tr>
</tbody>
</table>

It is also observed that there should be more transparency in
formance assessment and appraisal should be made more pragmatic/
national. Some awards/incentives must be attached to good performance enhancing the motivational level and giving an upshot to the work-effort of organizations.

Though the DRDO HRM/HRD policy is very strong, which caters for training and development of scientists/staff. 67 per cent of the respondents agree to providing courses for scientist by arranging training/education and scope of opening the future promotional avenues.

68 per cent of the scientists feel the requirement of development of soft and core competencies of continuously developing skills. These are encouraged by HRM policies. 63 per cent respondents said that they are better chances of promotion after education. DRDO supports and encourage such programmes by giving study leave (with pay).

10 Synthesis

An empirical study carried out in this chapter based on questionnaire sent to many representative organizations/laboratories, reveal very pertinent facts, which require consideration for further improvement in the working. The various outcomes are clubbed in the six propositions derived for studying in this work and are given in the succeeding paragraphs.

1.1 Pareto Law (P-1)

Points emerge as:
DRDO labs work on long-term focus of the products/services required (57 per cent responses)
The vital few measures being adopted today is co-creation of customer value, i.e. organizations and customer's-co-creating values through personalized experiences. This also says that labs cannot think unilaterally—they are much users-dependent.
In spite of TQM, some labs are working on EQM (Experience Quality Management). The customer now demand variability with quality of execution-wants cross-channel consistency in reliability, speed etc. (70 per cent).
Few labs are working on newer concept of 'evolvability' (e.g. modular design or so) which enables future modifications and extensions based on consumer's changing needs, by embedding intelligence design functionality as the user evolves.
Sense of urgency (50 per cent respondents) work-culture has set in.

12 Six Sigma (P-2)

Findings under this proposition are:
67 per cent of respondents agree to the cultural acceptance of change and they are adoptable to the organizational change.
70 per cent of the respondents feel belongingness to the organizations.
63 per cent respondents are willing to use new management techniques.
Participative activity takes place by all personnel, which is responded by 70 per cent of responses.
0.3 Theory of Constraint (P-3)

In, we find out, generally, weak-links or constraints, in the organizations for further improvement. Some of the constraints brought out from the questionnaire study are as under.

- Delegative leadership type style is quite less (03 per cent) practiced. It should be more often practiced for improving flexibility.
- Matrix type organizational structure is only (17 per cent) which is one of the major constraints of few of the DRDO labs.
- Employee interchangeability is very low (73 per cent) as per response and rather no interchangeability is (10 per cent) as per the responses received.
- Decentralized decision-making is around 30 per cent, which is low.
- Career planning in the organization exists upto 37 per cent, which should be more.
- Majority of scientists, feel that DRDO is sensitive to external climate.

0.4 Power of Full Engagement (P-4)

Following few points emerges from this proposition.

- Decentralized decision-making is only 30 per cent, as per responses, received.
- Participative planning and control is visible by 70 per cent of responses received which indicates use of thinking power of top management/individuals.
- Continuum development of new skills is around 43 per cent and cooperation/coordination is 47 per cent, which is a positive attitude
- Management and core group attitude is around 63 per cent for adopting new management techniques.
- Also, planning attitude in the labs are 53 per cent, which is considered pro-active.
90 per cent scientists feel that due to the existing policy of DRDO, it is possible to bring in new ideas/innovative technologies etc.

Total outcome of is customer satisfaction (70 per cent) is encouraging.

5.5 Continuity and Flexibility (P-5)

The proposition brings in the following main findings.

- DRDO labs use long-term planning approach which provides them adequate flexibility. Also long-term focus (57 per cent) enhances flexibility.
- Participative type of leadership style (57 per cent) has less flexibility. Also delegative type leadership is only 15 per cent which shows lesser flexibility.
- Planning and control is a participative activity (70 per cent) which is an indication of a participative flexible mechanism in existence.
- Decision-making (67 per cent) being done through consensus, makes organizations enough flexible type.
- Training and Development is around 75 per cent as per respondents, which increases potential for flexibility.
- The coordination/mutual adjustments are found to be existing 63 per cent, which provides adequate flexibility to the organizations.
- Management attitude is open (63 per cent) which provides flexibility to the labs.
- Planning attitude (53 per cent) is proactive, which imparts DRDO labs flexibility.
- 60 per cent of the respondents feel flexibility in HRM and adequate flexibility is used while handling projects.

6.6 HR Balanced Score Card –BSC (P-6)

In, HR performance drivers are customer loyalty, customer or employee reaction or even employee productivity. The outcome of the HR lecture serve actually organization’s strategy.
Some salient points from the present study are:

- Customer focus on long-term basis (57 per cent) found based on responses.
- About 70 per cent people participate in planning and control of the activities, which is considered one significant performance HR drivers.
- 57 per cent of participative and committed leadership drives may be counted as positive finding.
- Majority of personnel agree for internal T&D programmes, which may be reckoned towards learning and growth.
- R&D cycle, process–time improvement by reducing process time are also part of BSC programme 70 per cent respondents feel that SOP and standardization is higher in the DRDO labs (70 per cent) and it saves time and is a good time-management exercise. Learning, training and development has added value to customer satisfaction (70 per cent).

A summary of all the emerging parameters have been tabulated in Table 7.12.

Table 7.12: Summary of Empirical Study

<table>
<thead>
<tr>
<th>Item: Description</th>
<th>Ratings of Respondents (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term focus planning</td>
<td>57%</td>
</tr>
<tr>
<td>Sense of urgency desirable</td>
<td>50%</td>
</tr>
<tr>
<td>EQM (experience quality management) reliability, speed etc.</td>
<td>70%</td>
</tr>
<tr>
<td>Cultural acceptance of change</td>
<td>67%</td>
</tr>
<tr>
<td>Belongingness to organizations</td>
<td>70%</td>
</tr>
<tr>
<td>Willing to use new technologies</td>
<td>63%</td>
</tr>
<tr>
<td>Participative activity-Planning and control</td>
<td>70%</td>
</tr>
<tr>
<td>Employee interchangeability</td>
<td>73%</td>
</tr>
<tr>
<td>Decentralize decision-making</td>
<td>30%</td>
</tr>
<tr>
<td>Career planning exists</td>
<td>37%</td>
</tr>
<tr>
<td>Continuous development of new skills</td>
<td>43%</td>
</tr>
<tr>
<td>Management attitude</td>
<td>63%</td>
</tr>
<tr>
<td>Planning attitude</td>
<td>53%</td>
</tr>
<tr>
<td>Participative type leadership style</td>
<td>57%</td>
</tr>
<tr>
<td>Decision-making through consensus</td>
<td>73%</td>
</tr>
<tr>
<td>Training, development and education</td>
<td>75%</td>
</tr>
<tr>
<td>Fresh/innovative thinking- ushering in DRDO labs</td>
<td>90%</td>
</tr>
<tr>
<td>R&amp;D cycle, reducing process cycle time improvement etc.</td>
<td>70%</td>
</tr>
<tr>
<td>Time-management</td>
<td>70%</td>
</tr>
<tr>
<td>Flexibility in HRM</td>
<td>70%</td>
</tr>
<tr>
<td>Opening of HRD/HRM cell in DRDO labs</td>
<td>100%</td>
</tr>
<tr>
<td>Technology-oriented -DRDO</td>
<td>60%</td>
</tr>
<tr>
<td>DRDO-product-driven</td>
<td>40%</td>
</tr>
<tr>
<td>Coordination of activities/sub-activities sub-activities</td>
<td>63%</td>
</tr>
<tr>
<td>No systematic rotation of scientists</td>
<td>67%</td>
</tr>
<tr>
<td>Communications, strong</td>
<td>83%</td>
</tr>
<tr>
<td>Performance assessment system</td>
<td>83%</td>
</tr>
<tr>
<td>Organizational structure</td>
<td></td>
</tr>
<tr>
<td>(a) Functional</td>
<td>53%</td>
</tr>
<tr>
<td>(b) Divisional</td>
<td>30%</td>
</tr>
<tr>
<td>(c) Matrix</td>
<td>17%</td>
</tr>
<tr>
<td>Continuum management</td>
<td></td>
</tr>
<tr>
<td>(d) (Succession planning) lacking</td>
<td>67%</td>
</tr>
<tr>
<td>(e) doing</td>
<td>33%</td>
</tr>
<tr>
<td>Crisis management</td>
<td>80%*</td>
</tr>
<tr>
<td>Richly varied technologies</td>
<td>70%</td>
</tr>
<tr>
<td>Standardization (high)</td>
<td>70%</td>
</tr>
<tr>
<td>Discipline of execution (XQ)</td>
<td>75%</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>70%</td>
</tr>
</tbody>
</table>

Overall system is quite strong—it carries on
Better pay and promotional avenues and other forms of compensation management certainly improves work-culture. These findings have been reported by respondents (87 per cent) responses.

11 Concluding Remarks

A questionnaire analysis has distinctly provided the working environment insights of the strong and weaker points and other allied traits of the various representatives labs of the DRDO, in terms of structure, process and human resource practices.

The study has brought out the following main aspects:

(a) HR Core competence
(b) Breakthrough technological aspects and infrastructural growth
(c) Strong communication network
(d) Flexible environment for ensuring adaptability
(e) Freedom of choice
(f) Discipline of execution
(g) Belongingness and esprit-de corps
(h) Experience quality management

All the above ingredients brought out and the questionnaire analysis in co-creating shared values, leadership styles and learning experience environment which finally culminates into more focused passionate work-