CHAPTER 3

SIX SIGMA ORGANISATION IN ENGINEERING COLLEGES AND THEIR ROLES AND RESPONSIBILITIES

3.1 INTRODUCTION

There are several key positions constituted in an organisation for the efficient and effective management of the whole organisation. Once the management has decided to implement six sigma as quality improvement strategy, the real work is up to a collection of business leaders, team members, team leaders and facilitators (Pande and Holpp 2002). In six sigma organisations, the employees are systematically trained and their roles are named as in karate martial arts like Green Belt (GB), Black Belt (BB) and Master Black Belt (MBB) based on their knowledge and experience in applying statistical tools and techniques. Some of the research papers (Sreenarayanan et al 2011) have mentioned six sigma organisation structures for higher educational institutions.

The general present organisation structure of the private engineering colleges is shown in Figure 3.1. The six sigma organisation structure as shown in Figure 3.2 can be constituted as it is the suitable structure for self-financing private engineering colleges in India managed by Trusts or Societies. The Chairman or Managing Trustee of the self financing engineering colleges may be designated as senior executive or six sigma leader. The Secretary / Correspondent and Governing Council Members are designated as
Executive Committee, the Principal of a college is called the Champion, Heads of Departments (HODs), Dean, or Director are termed as Process owners, Six sigma consultant from outside the college may be given Master Black Belt, Senior faculty members as Black Belts, faculty members as Green Belts, and Fresh faculty and some senior students can be included as Team Members. The following sections explain various designations and their roles and responsibilities along with their routine works for improving quality.

![Organisation Structure](image)

**Figure 3.1 General Organisation Structure in Private Engineering Colleges**

### 3.2 SENIOR EXECUTIVE

The senior executive is called six sigma leader. In self-financing private engineering colleges, the Chairman and/or Managing Trustee can take this role for providing initiation, direction, and alignment necessary for six sigma’s ultimate success.
Responsibilities:

- Lead the executive committee members
- Participate six sigma project teams
- Maintain long term vision, support, and involvement
- Conduct project reviews

3.3 EXECUTIVE COMMITTEE

The members of the executive committee are the top management of an organisation. It consists of Secretary, Correspondent and Governing Council Members. They should operate at the same level of commitment for six sigma implementation as the senior executives.

Responsibilities:

- Project selection, prioritize and manage the six sigma project
- Assign champions, black belts, and green belts to six sigma projects
- Conduct periodic review of six sigma projects
- Improve and identify strategic improvement initiatives
- Remove barriers for effective implementation of six sigma projects
- Provide necessary resource for timely completion of six sigma projects.
3.4 **CHAMPION**

A champion is an executive providing sponsorship for six sigma project to succeed. In self-financing private engineering colleges, the Principal of the Institution act as Champion of Six Sigma projects. It is a leadership role in conducting and implementing six sigma projects throughout the organisation working with executive committee, MBBs, BBs and GBs.

Responsibilities:

- Select a black belt project, identify and allocate projects
- Ensure sufficient resources for training and completing projects
- Keep the team focused on providing direction and guidance for a successful completion of the projects
- Ensure that six sigma methods and appropriate tools are being used in the project
- Review the progress of their project periodically

3.5 **PROCESS OWNERS**

A process owner is the manager of a process with direct responsibilities for the specific process being improved by the Green Belt and Black Belts. In engineering colleges, the Heads of the Departments, Dean and Director can act as process owners.
Responsibilities:

- Monitor the progress of BB and GB and give guidance and motivation
- Empower the Black Belts for improvement action
- Analyse how the process works, understand the capability of the process, and develop the relationship of the process to other processing in the organisation

3.6 MASTER BLACK BELTS

Master Black Belts are highly qualified and experienced six sigma consultants. They may be full time employees or hired as consultants from outside. Senior faculty at Professor level can be trained as MBB.

Responsibilities:

- Help to identify, prioritize and coordinate key project areas in keeping with strategic initiatives of six sigma projects
- Teach and train the BBs and GBs about six sigma theory, tools and methods
- Mentor BBS and GBs
- Continuously improve and innovate the organisation’s six sigma process
- Act as liaison between the management and six sigma team
3.7 BLACK BELTS

A Six Sigma Black Belt is a full time quality professional and improvement leader. He may not be an expert in the process under study but goes through a rigorous training program in the application of tools and techniques working with subject experts to improve the processes. Senior faculty member expert in subjects with good experience in teaching can lead as BBs.

Responsibilities:

- Prepare a project charter and time line
- Communicate the progress of the project to the top management
- Lead the project team
- Provide training in tools to Green Belts and team members
- Motivate, guide and mentor the team.
Figure 3.2 Proposed Six Sigma organisation structure with their roles
### Table: 3.1 Roles, responsibilities of six sigma organisation with routine functions

<table>
<thead>
<tr>
<th>Roles</th>
<th>Designation</th>
<th>Routine functions</th>
<th>Six sigma responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior executive (six sigma leader)</td>
<td>Chairman, Vice-Chairman, Managing Trustee</td>
<td>Overall Developmental Activities</td>
<td>Resource Allocation for Infrastructure Development</td>
</tr>
<tr>
<td>Executive committee</td>
<td>Secretary, Correspondent and Governing Council Members</td>
<td>Faculty Recruitment Process</td>
<td>Resource Allocation for Infrastructure Development</td>
</tr>
<tr>
<td>Champion</td>
<td>Principal</td>
<td>Subject Allocation</td>
<td>Faculty Training and Development, Guidance, Motivation</td>
</tr>
<tr>
<td>Process owner</td>
<td>HODs, Dean, Director, Placement officer</td>
<td>Lecture Plan</td>
<td>Faculty Training and Development</td>
</tr>
<tr>
<td>Master Black Belts (MBB)</td>
<td>Six sigma Trainer and consultant</td>
<td>Subject Allocation</td>
<td>Training all Stake Holders, Applying six sigma tolls and techniques</td>
</tr>
<tr>
<td>Black Belts (BB)</td>
<td>Senior faculty members</td>
<td>Academic work</td>
<td>Motivational Technique</td>
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<tr>
<td>Green Belts (GB)</td>
<td>Faculty members</td>
<td>Preparation of Teaching Aids</td>
<td>Processing Improvement</td>
</tr>
<tr>
<td>Team Members</td>
<td>Fresh faculty and some senior students</td>
<td>Academic work</td>
<td></td>
</tr>
</tbody>
</table>
3.8 GREEN BELTS

A Green Belt is an individual who works as a part-time professional on six sigma projects though he works as a full time employee of an organisation. Faculty members of an engineering college can act as GBs for improving the quality in their domains. They should have support and technical background familiar with all the basic statistical tools.

Responsibilities:

- Refine a project charter
- Review the project
- Communicate with champion, MBBs, BBs and process owners
- Complete Six Sigma Green Belt projects which have one CTQ and do not require many organisational resources.

3.9 TEAM MEMBERS

Fresh faculty from various departments and some of the senior students can be given training as team members.

3.10 CONCLUSION

In order to implement six sigma break-through management strategies as quality improvement methodology, it is essential to augment the present organisation into six sigma organisation. In this research, it is well identified and a suitable organisation structure is constituted for self-financing private engineering colleges in India and their roles, responsibilities along with their routine functions are also identified. This structure can also be modified suitably as per the requirement of the specific colleges.