One of the major objectives, if not the most important one, of the modern organisations is to achieve 'total quality'. There are different meanings of the term 'quality'. 'Conformance to specifications or standards', 'fitness for use', etc., are some of such meanings that are generally accepted in the industrial world. There is also a tendency to appreciate 'quality' only in the narrow sense of product quality. While these understandings continue to be relevant, the need for enlarging the scope of the term, keeping the environmental changes in mind, has arisen and that has gradually led to the development of the concept of Total Quality Control (TQC). Today, TQC seems to be a must for any progressive organisation striving for continuous improvement at all levels and in all functional areas to gain a competitive edge over others both in the domestic and international markets.

In 1967, Dr. A. V. Feigenbaum of General Electric defined Total Quality Control (TQC) as 'an effective system for integrating the quality development, quality maintenance and quality improvement efforts of the
various groups in an organisation so as to enable production and service at the most economical level which allow for full customer satisfaction'. Thus, TQC requires the participation of all divisions, including marketing, design, manufacturing, inspection and shipping. By and large, this is how the concept of Company-wide Quality Control (CWQC) was developed and applied by the Japanese since the World War II.

Dr. K. Ishikawa, the originator of the QC concept has rightly stated:

"1) QC's activities are part of TQC and should not be separated from it.

2) In Japan, QC activities were started after TQC had been introduced. This is the correct order in principle, but in medium and small businesses and the service sector it is also permissible to start with QC activities. However, if TQC is not introduced within two to three years, the QC activities will fail."

This Chapter has been designed with a view to
covering the different aspects of operationalisation of QC. Discussion has been made in different sections relating to the following:

I) structure of QCs;
II) launching and institutionalising QCs;
III) operation and process of QCs;
IV) presentation before the management, and
V) implementation of QCs' recommendations.

I) **Structure of QCs**

The structure of QCs is governed by the unique conditions prevailing in different countries and organisations and also has to suit the set up that is already existing. As, eventually, QCs get integrated into the organisation's total operations, it is advisable not to give a separate entity to the structure of QCs in any organisation. Every department and every work area should feel responsible to make the operation a success. QCs should not be considered the sole privilege of any single function. If that were to happen, there would be a danger of the QC movement being considered solely as a matter between the QC and the concerned department.
Such a situation would preclude others from indirect involvement in and support to the activities of QCs. The aim is to see that the concept gets woven into the fabric of the organisation and becomes a way of life for everyone in every sphere of work. The important work of co-ordination, however, has to be entrusted to a specific department not as one of the technical functions but only for administrative and co-ordination purposes.

The structure of QCs, put in a simple 'pyramid' form, would appear as follows:

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\[\text{QCS' SECRETARIAT} \quad \text{STEERING COMMITTEE} \quad \text{DEPARTMENTAL COMMITTEE} \quad \text{FACILITATOR} \quad \text{LEADER/DEPUTY LEADERS} \quad \text{MEMBERS} \quad \text{NON-MEMBERS}\]
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**Supportive role (Non-directive)**

**Voluntary participation**
The above simple structure of QCs has been suggested on the basis of available documented experiences in different countries and different types of organisations. There is nothing like an ideal and a wide variety of structures are possible, keeping the unique socio-cultural and organisational needs in mind. The major components (both direct and indirect) have been discussed, in brief, below.

**Non-members**: In any work area, all the employees may not initially volunteer to join the QCs. They (non-members), however, play a significant role vis-a-vis the success of the QCs. The QC members find it quite difficult to implement any solution to a problem without the active co-operation of the non-members.

**Members**: Members constitute the basic component in the structure of a QC. The scope for membership should be there for those employees who had never been considered as capable of using their creativity and whose potential was not at all realised. Normally, the formal membership of a QC is kept open to the grass-root-level employees and the foremen/supervisors.
Leader/Deputy Leader: In the early years of functioning of QCs, a QC was headed by only one person, i.e., the leader. But, if, due to a number of reasons, a leader was absent, the next man (i.e., the deputy leader) had to lead the QC, ensuring regular QC meetings and uninterrupted QC activities. In the Indian organisations, it has been found that the QC members usually choose their supervisor as their leader. Effective functioning of a QC, no doubt, requires that the said leader (or any deputy leader in the absence of the leader) gets necessary training vis-a-vis functioning of a QC before he takes charge.

Facilitator: The facilitator is a senior officer of the department where the QC is functioning and is nominated by the management. He plays a crucial role in making the QC effective. In the Indian organisations, where QCs are operating, the facilitators have, by and large, been found to be highly regarded by the QCs' members.

Departmental Committee: This committee functions at the departmental level. The idea of this type of committee is a later development based on the experiences of operating QCs. It ensures greater involvement of the
middle-level executives in the functioning of the QCs. The departmental head is usually the chairperson of the departmental committee.

Steering Committee: This committee comprises heads of the major functional areas as members and the chief executive of the organisation as the chairperson. For effective functioning of the QCs in an organisation, the top management's involvement and commitment is a pre-requisite and that must be visible to all the QCs' members.

Co-ordinating Agency: While the facilitator nurtures QCs in his section/department, the co-ordinating agency, helps organise the activities of the QCs throughout the organisation. Normally, a department is named as the co-ordinating agency to ensure continuity and it could be the Quality Assurance/Human Resources/any other department to be decided by the steering committee.

Top Management: Though the chairperson/president/chief executive officer (CEO) and the directors/vice-presidents of any large organisation are not a formal part of the structure of QCs, they and the other top managerial
personnel have very important roles to play to ensure effective functioning of the QCs there. A quality council is usually formed with a view to helping the Total Quality Management (TQM) activities as a whole and guiding the functions of the QCs in the organisation. Such quality council normally reports directly to the CEO of the organisation.

II) Launching and institutionalising QCs

QCs, once formed, become permanent in nature and, therefore, it is essential that they are launched with care and after adequate preparation so that no QC becomes dormant or ineffective subsequently.

The steps to be taken for effectively launching and institutionalising the QCs in an organisation are stated, in brief, below.

A. Launching QCs

(1) To start with, a presentation of the QC concept to the top and senior managerial personnel is made. Their understanding, conviction and faith in the QC philosophy are essential.
(ii) After a favourable response, the middle-level executives are then exposed to the concept. They are to indicate the areas under their control where the QCs can be formed to start with.

(iii) They have to encourage the employees in such identified areas, through informal discussions, to be receptive to the concept of the QC. No employee should be barred from joining the QCs on any consideration whatsoever. Membership should be open to all the non-executive employees irrespective of their ideological stand.

(iv) Such groups of employees would then be further exposed to the concept of QC through audio-visual mechanisms and lectures and invited to form QCs voluntarily.

(v) On receiving voluntary nominations for membership, a senior officer (e.g.,
senior manager/manager) in the identified area would be nominated as the facilitator.

(vi) The steering committee with the chief executive of the unit as the chairperson and the departmental heads as the members would be formed and announced.

(vii) The facilitator would be given adequate orientation on the concept and techniques of QC and his role. The leaders and deputy leaders would be given a two-day training with the other members, if practicable.

(viii) The facilitators would fix a schedule for the meetings of the QCs for, at least, an hour on any fixed day of the week after consulting the members of the QCs. The facilitators would provide necessary facilities for the QC meetings.

(ix) A QC would be formally inaugurated by presenting badges, etc., to the members preferably by the CEO.
QC boards would be put up in the concerned work areas with names of leader/deputy leader/members/facilitators and with provision for incorporating the plan(s) and status of the project(s) in hand.

B. Institutionalising QCs

(i) Facilitators should ensure that the QCs in their areas maintain a record of their activities in two registers meant for:

(a) recording the proceedings of the meetings, and

(b) recording the progress of the projects undertaken vis-a-vis the identified problems.

(ii) Facilitators should arrange for mid-term presentations before the management of the unit, preferably once in six weeks and select the issues, in consultation with the leaders of the QCs, for presentations before the top management of the organisation, preferably once in three months.
(iii) Facilitator/leader should brief the concerned departmental head regarding the QC activities after each meeting so that the departmental head can keep himself informed and can offer guidance whenever required.

(iv) The services like engineering, finance, etc., with respect to the different areas should also be exposed to the QC concept in order to have a better understanding with a view to rendering any assistance that may be required by the existing QCs and to launching QCs in their own areas if they so desire.

(v) It is advisable not to dilute the philosophy of QC by introducing any monetary reward as it is based mainly on the motivational aspects of employees' job satisfaction by creating opportunities for applying their creativity and facing challenges to their jobs, and, ultimately, meeting their higher-level needs like
social, affiliation, esteem, recognition and self-actualisation needs. For example, the need for recognition can be met by:

(a) opportunities for presentation before the management;
(b) visits to other units, participation in conferences, etc.;
(c) publication of QCs' activities in journals/newsletters;
(d) prizes awarded to the best QC annually (criteria for adjudging the QCs must be carefully evolved in consultation with all concerned) as decided by the steering committee;
(e) any other token appreciation as may be decided by the steering committee, and
(f) a bi-annual or annual get together of the members of the QCs, facilitators and steering committee members.
(vi) The steering committee in consultation with the facilitators should, inter alia,

(a) convene monthly leaders' meetings;
(b) ensure systematic documentation of case studies;
(c) organise presentations before the top management, lectures, conventions, seminars, get togethers, etc.;
(d) organise training programmes;
(e) arrange for publishing newsletters/literature, maintenance of display boards, etc.;
(f) help every employee get exposed the philosophy of QC, and
(g) develop suitable tailor-made schemes for satisfying the QCs' members need for recognition.

III. Operation and process of QCs

The QCs start functioning after training of the QCs' members and formal inauguration of the QCs. The successful operation of the QCs would depend, to a
large extent, on structure and depth of the training programmes organised.

1. For effective functioning of QCs, the aspects stated below require serious consideration. The members of the QCs must be trained to acquire/develop, inter alia,

i) understanding the people-building elements in the QCs;

ii) knowledge relating to group dynamics and synergic functioning;

iii) skills necessary to conduct meetings effectively;

iv) knowledge relating to, and skills necessary for effectively conducting, brainstorming for fostering creativity;

v) knowledge relating to, and skills necessary for fostering, group creativity;

vi) leadership quality;

vii) skills necessary for planning and setting different types of goals;
viii) knowledge relating to, and skills necessary for applying, the appropriate problem-solving techniques/tools;

ix) skills necessary for effective communication including interpersonal skills;

x) social skills; and

xi) the ability to prepare and present a case before the management.

2. The training programmes for the leaders and members of the QCs should be normally for a minimum period of 3 days in order to enable them to develop, inter alia, their 'group functioning' (syndicate) and 'role playing' skills. This type of training needs to be followed up after about a year as a reinforcement exercise.

3. After training of the QCs' members and formal inauguration of the QCs, meetings are arranged usually once in a week for about an hour. The QC members decide upon the date and time in consultation with the facilitator. Such consultation is necessary in order to avoid more than one meeting at the same time and in the same place and meetings during the productive hours. The
decision regarding whether a meeting should take place during the working hours or not is usually left to the organisation and the concerned QC members and that may vary from one organisation/department to another.

4. A question often raised is whether QC members should be compensated when they meet beyond the working hours. This is usually again left to the organisation and the concerned QC members. In this connection, it is interesting to note that around 67% of the QCs in Japan meet beyond the working hours and most of the organisations pay "educational allowance" or "snack allowance" for the members of such QCs. The amount, however, varies from one organisation to another. Organisations there, which do not pay, provide good facilities to the QCs' members to go home after meetings.

In the subsequent paragraphs, how the QCs function from the very first meeting onwards have been discussed in brief.

1st meeting: Formal introduction and the necessary discussion on the tasks in hand are made. QC members meet at the place and time decided earlier and select their leader and deputy leader by consensus. The
facilitator or the co-ordinator provides the members with stationery and any other items necessary for their activities. Then the members give their QC a name for a distinct identity. The facilitator may make some introductory remarks affirming the management's support for the success of the QC's activities. Thereafter, the facilitator withdraws himself in favour of the leader for conducting the meeting. The leader conducts the meeting and informs the members that an important tool for QC, i.e., brainstorming, will be used in the next meeting in order to identify all the problems coming in the way to better quality, higher productivity and optimum performance in the concerned work area.

2nd meeting/3rd meeting: It has been noticed that, when a QC starts functioning, the members can identify, during their first few brainstorming sessions, a good number of problems affecting their work adversely. The employees, who are working in a particular area for a long time, know best the problems affecting productivity and quality and they are expected to come out with effective remedies to such problems. As such, the problems that need to be resolved are best identified by the members of the QC themselves. Therefore, based on their own understanding
of the problems and suggestions from other related persons, the members of the QC compile a list of all the problems that require to be tackled by them one after another. Initially, some guidance from the facilitator may be necessary to help the QC identify the real problems.

4th meeting: The QC members now take up the task of assigning priorities to the problems that they have identified. Prioritising of problems could be on the basis of any of the three criteria, i.e., simplicity of the problem; collection or generation of relevant data and then using the Pareto Analysis technique to identify which problem is affecting most the performance in the work area; the QC members are asked by the leader to rank the problems individually. The QC leader or the members may seek the guidance of the concerned managerial personnel or the facilitator before coming to any conclusion in this respect.

5th meeting: After selecting the problem by using the Pareto Analysis technique, preparation is made for drawing a 'cause-and-effect' diagram. The probable causes are identified and for that purpose brainstorming sessions are also used.
6th meeting: The 'cause-and-effect' diagram is drawn after listing the main causes in order and the sub-causes are identified accordingly. Through a process of critical examination, the causes (and the sub-causes) which do not really contribute to the effect are separated out and the QC members' attention is kept limited to the real cause(s).

7th meeting: In order to focus on the cause(s), the QC members again go through brainstorming sessions. The QC members' creativity, innovative behaviour and synergy come into full play here. The suggestions offered by them are recorded and each one is examined in terms of its merit and the best one is selected by consensus for recommendation and implementation. The QC also interacts with all those who would be affected as a result of the implementation of the recommendation and seeks their support and co-operation. Later on, the QC also examines the efficacy of the method suggested.

8th meeting: The QC members prepare themselves for the presentation before the management under the guidance of the facilitator. Each member is to contribute and assigned a specific task in the process of presentation. They are required to perform both individually and
collectively and preparation for the presentation before the management is made accordingly.

9th meeting: The rehearsal for the presentation before the management is conducted in the presence of the facilitator. Facilitator guides the QC members by providing them with positive feedback with a view to improving their performance both individually and collectively.

10th meeting: Final touches are given for the presentation before the management in the presence of the facilitator, co-ordinator, managerial personnel and non-member employees of the concerned work area. The scheme of the presentation is improved and gets refined in the process.

11th meeting: The date for the presentation before the management is fixed in consultation with the facilitator and the functional head of the work area.

12th meeting: The actual presentation is made in the presence of the functional head, facilitator, other managerial personnel and other employees of the concerned work area. The method(s) of effective presentation before the management is/are also discussed.
IV. Presentation before the management

Presentation before the management is the culmination of a QC's project. The recommendation of the solution to the problem selected would be more effective and purposeful if the presentation is made in a systematic way. These presentations would also serve as effective educational tools in future.

The following scheme may be adopted for the presentation before the management:

i) **Introduction:**
   a brief introduction of the work area, members, facilitator and time of meeting, etc.

ii) **Identification of problems:**
   to prepare a list of the number of problems identified through brainstorming sessions and to classify those theme-wise

iii) **Selection of the problem:**
   to show the classification of the problems and their frequency of occurrence by means of Pareto graph and to select the problems based on the 'vital few and trivial many' principle
iv) **Description of the problem:**

to describe the problem in detail with particulars as to how it is affecting quality, productivity, cost reduction, etc., in quantifiable terms

v) **Objective of the study:**

to state the objective in clear terms

vi) **Analysis of the problem:**

to mention all the causes on a cause-and-effect diagram and explain logically how the real cause(s) finally identified gave rise to the effect

vii) **Development of the solution:**

to list out the solutions suggested by all the members through brainstorming sessions and test them in terms of their pros and cons before arriving at the best solution by the consensus approach

viii) **Implementation of the solution:**

to describe the methodology of implementation of the solution by the QC members

ix) **Benefits accrued after implementation:**

to state the benefits accrued after implementation of the solution in quantifiable terms
A flow chart for presentation of a case study

Introduction → Identification of the problems and their classification
               ↓
              Selection of the problem
              ↓
              Description of the problem
              ↓
              Objective of the project
              ↓
              Analysis of the problem (cause-and-effect diagram)
              ↓
              Development of the solutions
              ↓
              Implementation of the solutions
              ↓
              Benefits accrued after implementation

The impact of presentation before the management would be greater if more than one QC member takes part in it. The leader can introduce the subject, leaving the task of presentation of details to the other members. The preparation for a presentation need not be expensive. The leader should ensure that all the members are involved in one way or the other in preparing the
It has been noted that the standard of presentation in every organisation improves gradually. As many QC members are exposed to the practice followed in Japan and elsewhere, the standard of presentation of case studies in some industrial organisations in India has improved a lot and can favourably be compared with that of many international organisations.

V. **Implementation of QCs' recommendations**

**Scope**

The recommendations of the QC may cover a wide spectrum of aspects such as quality, productivity, safety, cost reduction, housekeeping, etc. The results could be both tangible as well as intangible.

According to the QC concept, the QCs should enjoy full autonomy to implement their suggestions in collaboration with the facilitators wherever implementation is within their purview and no other factors are involved.

Where implementation of a QC's suggestions involve additional investments or major policy decisions, the recommendations need to be reviewed at the appropriate
level of management and its acceptance or rejection should be communicated to the QC immediately.

Cost-benefit analysis of QCs' activities

Every implemented recommendation of the QCs is bound to result in benefits to the organisation. But it is prudent not to lay too much emphasis on monetary savings. Because many of the results may be intangible, particularly in the service areas. Moreover, the attitudinal changes brought about among the employees (including the managerial ones) are of immeasurable value to any organisation.

However, it is useful for the co-ordinating department to keep a note of expenditure incurred for operating the QCs for the benefit of the steering committee.

The QCs themselves may be encouraged to use the baseline data collected and to be in a position to project the financial benefits (in physical terms) accruing from their recommendations wherever possible and keep the co-ordinating department informed. This may be ratified by the facilitators in co-ordination with the industrial engineering department wherever necessary. Co-ordinator could, however, arrange to have the gains in financial terms computed for the information of the steering committee from time to time.