QUALITY CIRCLES OR KAIZEN TEAMS

No book on TQM would be complete without a mention of Kaizen teams and quality circles. Kaizen is a philosophy of continuous improvement of all the employees in an organization so that they perform their tasks a little better each day. It is a never-ending journey centred on the concept of starting anew each day with the principle that methods can always be improved.

Kaizen Teian is a Japanese system for generating and implementing employee ideas. Japanese suggestion schemes have helped companies to improve quality and productivity, and reduced prices to increase market share. They concentrate on participation and the rates of implementation, rather than on the 'quality' or value of the suggestion. The emphasis is on encouraging everyone to make improvements quickly – there and then.

Kaizen Teian improvements are usually small-scale quick 'hot' solutions, in the worker's own area, and are easy and cheap to implement. Key points are that the objectives are clear, and implementation is rapid, which results in many small improvements that can accumulate to massive total savings and improvements.

One of the most publicized aspects of the Japanese approach to quality has been these quality circles or Kaizen teams. The quality circle may be defined then as a group of workers doing similar work who meet:

- Voluntarily

- Regularly
- In normal working time
- Under the leadership of their 'supervisor'
- To identify, analyse and solve work related problems
- To recommend solutions to management.

Where possible quality circle or Kaizen team members should implement the solutions themselves.

The quality circle concept first originated in Japan in the early 1960s, following a postwar reconstruction period during which the Japanese placed a great deal of emphasis on improving and perfecting their quality control techniques. As a direct result of work carried out to train foremen during that period, the first quality circles were conceived, and the first three circles registered with the Japanese Union of Scientists and Engineers (JUSE) in 1962. Since that time the growth rate has been phenomenal. The concept has spread to Taiwan, the USA and Europe, and circles in many countries have been successful. Many others have failed.

In the early days it was very easy to regard quality circles as the magic ointment to be rubbed on the affected spot, and unfortunately many managers in the West first saw them as a panacea for all ills. There are no panaceas, and to place this concept into perspective, Juran, who was an important influence in Japan's improvement in quality, stated that quality circles represented only 5–10 per cent of the canvas of the Japanese success. The rest is concerned with understanding quality, its related costs and the organization, systems and techniques necessary for achieving customer satisfaction.

Given the right sort of commitment by top management, introduction and environment in which to operate, quality circles can produce the 'shop floor' motivation to achieve quality performance at that level. Circles should develop out of an understanding and knowledge of quality on the part of senior management. They must not be introduced as a desperate attempt to do something about poor quality. The term 'quality circle' may be replaced with a number of acronyms but the basic concepts and operational aspects may be found in many organizations.

The structure of a quality circle or Kaizen organization

The unique feature about quality circles or Kaizen teams is that people are asked to join and not told to do so. Consequently, it is difficult to be specific about the structure of such a concept. It is, however, possible to identify four elements in a circle organization:

- Members
- Leaders
- Facilitators or co-ordinators
- Management.

Members form the prime element of the concept. They will have been taught the basic problem solving and process control approaches and techniques and, hence, possess the ability to identify and solve work related problems.

Leaders are usually the immediate supervisors or foremen of the members. They will have been trained to lead a circle or Kaizen team and bear the responsibility of its success. A good leader, one who develops the abilities of the circle members, will benefit directly by receiving valuable assistance in tackling nagging problems.

Facilitators are the managers of the quality circle or Kaizen programmes. They, more than anyone else, will be responsible for the success of the concept, particularly within an organization.

The facilitators must co-ordinate the meetings, the training and energies of the leaders and members, and form the link between the circles and the rest of the organization. Ideally the facilitator will be an innovative industrial teacher, capable of communicating with all levels and with all departments within the organization.

Management support and commitment are necessary to Kaizen and quality circles or, like any other concept, they will not succeed. Management must retain its prerogatives, particularly regarding acceptance or non-acceptance of recommendations, but the quickest way to kill a programme is to ignore a proposal arising from it. One of the most difficult facts for management to accept, and yet one forming the cornerstone of the Kaizen/quality circle philosophy, is that the real 'experts' on performing a task are those who do it day after day.

Training Kaizen teams and quality circles

The training of circle/Kaizen leaders and members is the foundation of all successful programmes. The whole basis of the training component is that the ideas must be easy to take in and be put across in a way that facilitates understanding. Simplicity must be the key word, with emphasis being given to the basic techniques. Essentially there are eight segments of training:

1. Introduction to quality circles or the Kaizen approach, including the 'Blitz'
2. Brainstorming
3. Data gathering and histograms
4. Cause and effect analysis
5. Pareto analysis
6. Sampling and stratification
7. Control charts
8. Presentation techniques.

Managers should also be exposed to some training in the part they are required to play in the Kaizen/quality circle philosophy. Such a programme can be effective only if management believes in it and is supportive and, since changes in management style may be necessary, managers' training is essential.

Operation of quality circles/Kaizen teams

There are no formal rules governing the size of a quality circle/Kaizen team. Membership usually varies from three to fifteen people, with an average of seven to eight. It is worth remembering that, as the circle becomes larger than this it becomes increasingly difficult for all members to participate.

Meetings can be held in the work area or away from it so that members are free from interruptions, and are mentally and physically at ease. If away from the work space, the room should be arranged in a manner conducive to open discussion, and any situation that physically emphasizes the leader's position should be avoided. To a large extent the nature of the problems selected will determine the nature of the meetings, the interval between them and the venue.

Great care is needed to ensure that every meeting is productive, no matter how long it lasts or how frequently is it held. Any of the following activities may take place during a circle meeting:

- Training – initial or refresher
- Problem identification
- Problem analysis

- Preparation and recommendation for problem solution
- Management presentations
- Quality circle/Kaizen team administration.

It is sometimes necessary for quality circles to contact experts in a particular field, e.g. engineers, quality experts, safety officers, maintenance personnel. This communication should be strongly encouraged, and the normal company channels should be used to invite specialists to attend meetings and offer advice. The experts may be considered to be 'consultants', the quality circle/Kaizen team retaining responsibility for improving a process or solving the particular problem. The overriding purpose of quality circles or Kaizen teams is to provide the powerful motivation of allowing people to take some part in deciding their own actions and futures.

Kaizen Blitz events

Rapid benefits realization and effective employee engagement are clear features of the so-called 'Kaizen Blitz' approach which uses 1–2 week duration events, with multifunctional teams focused on single pieces of plant. 'World Class Manufacturing' (WCM) Kaizen methodologies have been developed and these should be tailored to focus on specific problem needs, such as:

- Asset Care & Total Productive Maintenance (TPM)
- Changeover time and quality (perhaps requiring numerous engineering call outs after each changeover).

The first day of Kaizen Blitz events usually covers training on all aspects of WCM, but with emphasis on the priority areas relevant to the task in hand, such as plant reliability. The bulk of the events should be very hands-on; predominantly on the shop floor or in analysis/problem-solving workshops. Using the insights and experience of cross-functional teams is key to gaining insight to solving problems but also to engage the team in the improvement process; breaking them out of the low morale fire-fighting culture so they actually see some benefit being realized through their ideas. Individuals are identified from the outset that should be trained in the Kaizen Blitz methodology so as to quickly remove dependence on external support and build capability in the business in the Kaizen approaches. The focus during the Kaizen Blitz events is implementation of improvement actions, but anything not finished is added to an implementation plan to be managed post-event.

Typical achievements from such Kaizen Blitz events include:

- Improved plant reliability:
  - For example, the fraction of unplanned downtime due to breakdowns was reduced from 16.5 per cent to 6.5 per cent in 4 months in one pharmaceutical company
  - Planned maintenance procedures updated using FMEA risk based approaches including the frequency and depth of maintenance
  - Production procedures improved, including changeover procedures, fault-finding matrices, pre-production check lists and deep clean procedures
  - Technical improvements identified through the Kaizen events.
- Skills and methods transfer:
  - The methodology is usually packaged to become a permanent method in the organization, to be used as required to support future improvement initiatives
  - Individuals are fully trained in running the Kaizen events for the site
  - Methodology ownership is transferred to manager with supporting improvement engineers or workers
  - Plans for rolling out to wider groups.