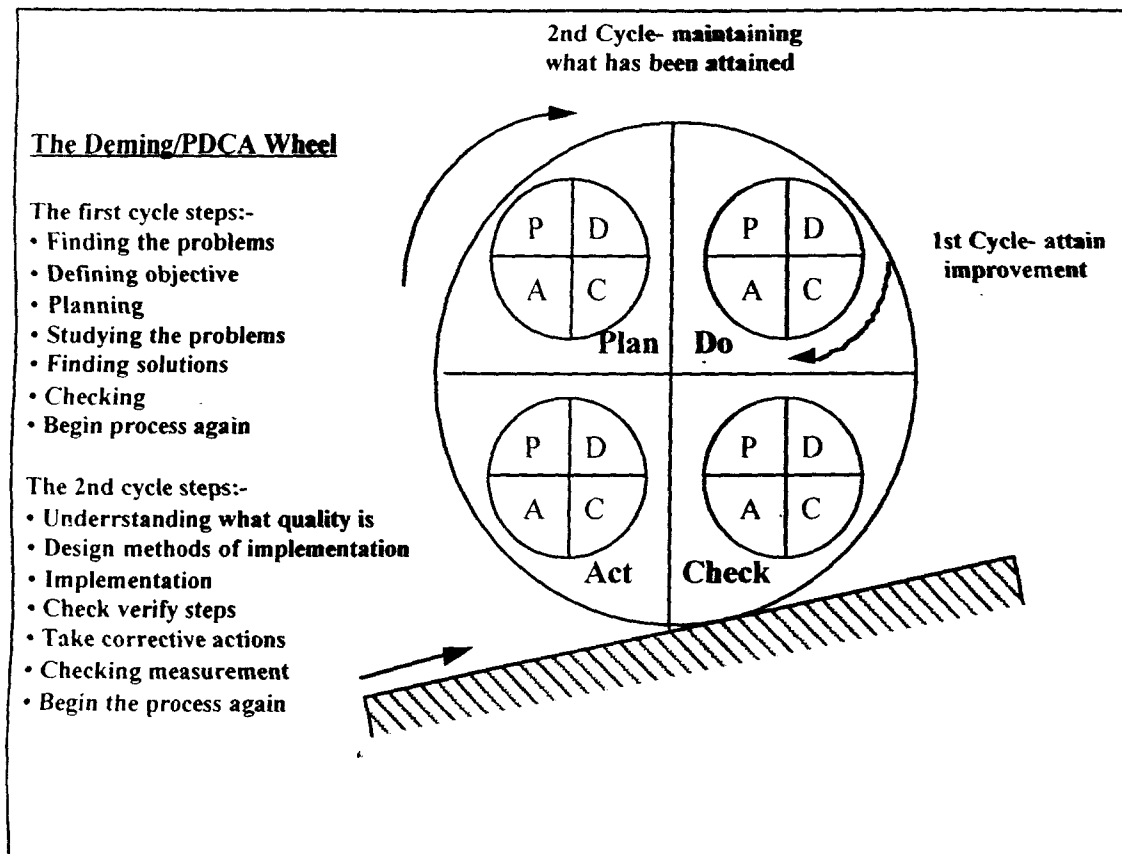# Chapter 3

QCC , WITHIN A TQM FRAMEWORK

To achieve excellence, companies must develop a corporate culture of treating people as their most important asset and provide a consistent level of high quality products and services in every market in which they operate. Such an environment has supported the wide acceptance of Total Quality Management (TQM) which emerged recently as a new, challenging and marketable philosophy. It involves three types of changes in the organization, the people, technology and structure.

Perigord (1990) defines Total Quality as a set of principles and methods organized as a comprehensive strategy with the goal of mobilizing the entire company in order to achieve the greatest client satisfaction at the lowest cost. It is also defined as a structured system, a set of tools, techniques and philosophies designed to create an organizational culture of customer focus, employee participation and continuous improvements to meet and exceed customer satisfaction (Tatikonda, 1996). Literatures written on TQM may vary in defining the requirements for total quality. However, there seemed to be two common factors that are necessary for the successful implementation of TQM. They are the need for employee involvement and continuous improvement. These are exactly, what the QCC's philosophy are built upon. The following will discuss, how QCC can help to facilitate continuous improvement and in encouraging total people involvement.

QCC as a Continuous Improvement Tool

Attainment of world class goals is only possible by striving for never-ending improvement in all aspects of performance. Once targets are met new ones are set, aiming for higher levels of product, process and service efficiency. The hallmark of a world-class manufacturing as defined by Schonberger (1986) is the 'continual and rapid improvement'. Whenever, the Japanese talk about TQM, they seemed to point their fingers to the Deming wheel. For them, TQM is the wheel invented by Deming, their prophet and national hero (Perigord 1990). It began with Kaizen, which represents a continuous improvement by everyone in all areas. In principal, it differs from the classical Western approach to improvement in that it relies on an investment in people, not equipment or systems. Kaizen is a continuous series of small step improvements made on existing equipment or systems by the people who actually work in that area. Another important aspects of Kaizen is the standardization and maintenance of improvements, that is crucial to the process improvement itself (Fukuda, 1994). The QCCs' are the right impetus toward continuous improvement. QCCs' extensively use the PDCA cycle (Plan, Do, Check and Act) (Figure 2) because it guides them to continuously plan, verify and take the necessary actions until the desired outcome is achieved.

Figure 2: The PDCA/Deming Wheel

2nd Cycle- maintaining
what has been attained

The Deming/PDCA Wheel

The first cycle steps:-
• Finding the problems
• Defining objective
• Planning
• Studying the problems
• Finding solutions
• Checking
• Begin process again

The 2nd cycle steps:-
• Underrstanding what quality is
• Design methods of implementation
• Implementation
• Check verify steps
• Take corrective actions
• Checking measurement
• Begin the process again

P | D
A | C
Plan

P | D
A | C
Do

1st Cycle- attain
improvement

P | D
A | C
Act

P | D
A | C
Check

Source: Ingle, 1982

The Deming wheel, with its perpetual ascent, provides a process for permanent improvement as well as consolidation of daily achievements and motivation in the company (Senge, 1993). Many firms invariably found that the quality of their products and services have improved as a result of QCC activities. QCCs' reveal all sorts of organiztional faults that prevent good practices , thus contributing to the pride in workmanship. In a study to assess the impact of the organizations' Continuous Quality Improvement process on performance, some process indicators were developed (Gutierrez, 1995). The number of quality circles established, number of quality circle meetings held, rate of participation of employees in these circles are used as some of the progress indicators of the organizations' continuous improvement efforts.

Another important element in seeking continuous improvement is the process of identifying the improvement opportunities itself. Efficient organizations allocate responsibility for improvement both vertically, within an organization structure and horizontally, in the processes that flow across organizational boundaries. Employee participation is one of the methods organizations use to identify improved opportunities as they are the closest to the product at hand and know what's best to do. Successful TQM programs have repeatedly shown that employees ' buy-in' the changes needed, understand, achieve objectives and work towards the demanding standards if they have been involved in understanding the need and identifying the method to satisfy those needs (Spenley 1994). There's also a need to communicate these opportunities to the organization so that ideas could be shared and valued collectively. Crosby (1996) is his book, 'Quality is Still Free', stated that one of the purposes of having teams is to provide a conduit for communication between all departments which had never paid much attention to each other. This in turn will force the leaders to come together and face the fact that a problem exists in the organizations. They should then identify the sources of the problems and find possible solutions together.

Continuous improvement is not the responsibility of management alone, but all employees. Employees' involvement programs are often used as a means to ensure total organizational participation in the firms' continuous improvement efforts (Tatikonda,1996) . Employee involvement and continuous improvement goes hand in hand to synergize the TQM efforts. The probability of an employee involvement
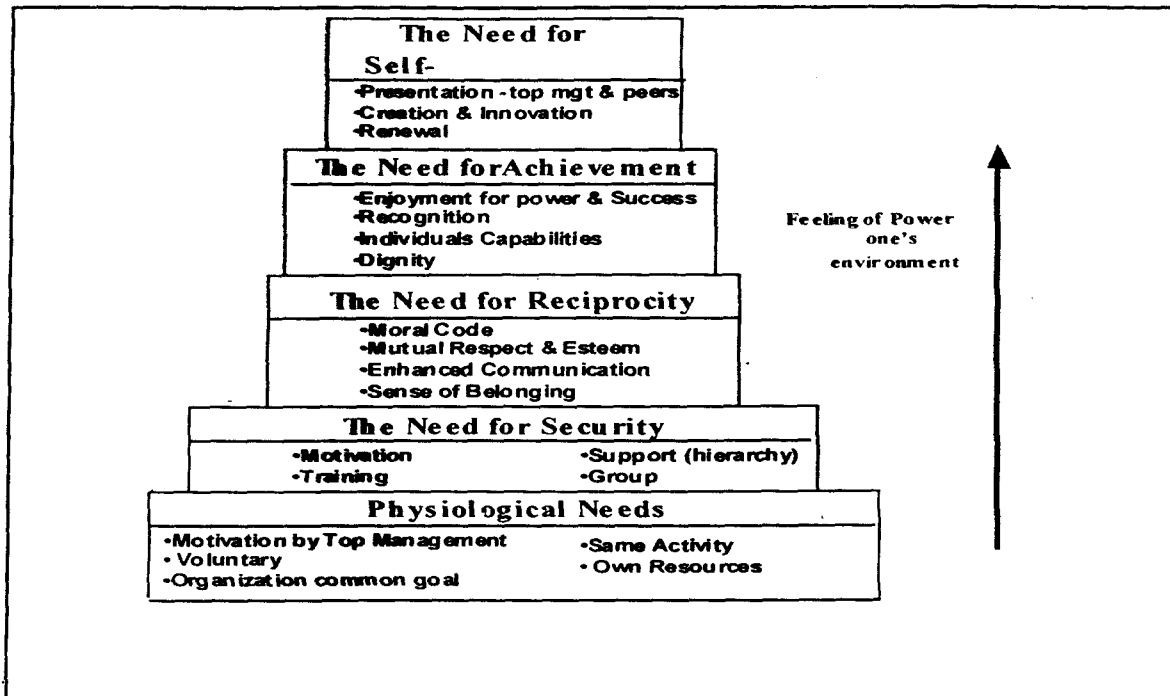
program's success can be enhanced by allowing employees to have genuine participation in the improvement process (Smith, 1996).

QCC and Employee Involvement

According to Perigord (1990) **Total Quality** is the willingness and ability that emerges when a company instills **a sense of responsibility** in all employees and secures their consent, especially at the highest level. The extent to which companies employ the core TQM practices tend to have a highly significant relationship to the measure of the overall employee involvement. To instill this, an organization needs to understand that people differ not only in their ability to do work but also in their will to do it. The motivation of people depends on the strength of their motives. Motives can be needs, wants, drives or impulses within individuals and vary from person to person. Based on Maslow's hierarchy of motivation theory, the role of quality circles in instilling answers to the human motivational needs is shown in Figure 3 .

The model shows what quality control circles and quality improvement groups can contribute in terms of employees' sense of power over their environment, depending on the extent to which their needs are fulfilled. The need for self esteem , competence and a psychological sense of success, are frustrated in the lower echelons of the traditional hierarchical organization. A new organizational structure should enable individuals to find more fulfillment in their work.

Figure 3: Motivations of Quality Circles

The Need for Self-
- Presentation - top mgt & peers
- Creation & Innovation
- Renewal

The Need for Achievement
- Enjoyment for power & Success
- Recognition
- Individuals Capabilities
- Dignity

Feeling of Power one's environment

The Need for Reciprocity
- Moral Code
- Mutual Respect & Esteem
- Enhanced Communication
- Sense of Belonging

The Need for Security
- Motivation
- Training
- Support (hierarchy)
- Group

Physiological Needs
- Motivation by Top Management
- Voluntary
- Organization common goal
- Same Activity
- Own Resources

The traditional organization frustrates psychological needs because it does not offer persons in the lower levels positions sufficient opportunity for internal promotion (Byham, Wellins and Wilson, 1991). It rarely offers jobs that make full use of individual aptitudes and responsibilities. Moreover, it imposes relationships with superiors that are dependent in nature (Hirschhorn 1991). The pressure of suppressed needs causes people to feel distant and withdrawn. On the other hand, the new organizational structure which takes care of the employees' psychological needs, could experience positive synergy. QCCs are said to be built as a motivation tool as they will satisfy the employees' needs (Juran 1973, Dewar 1980).

A number of the needs discussed in motivation theories are combined in Quality Circle philosophy. Motivation, participation and recognition are thethree major aspects of aQuality Circle Program (Ingle, 1982). In general, the quality circles would meet both the individual and collective needs of the organization such as the TQM. The ability to achieve this is essential for a more comprehensive quality program such as TQM (Tatikonda, 1996).

A survey performed on 279 companies in the Fortune 1000 in the United States in 1993 substantiates the close interrelationship and complementary natures of employee involvement and total quality management (Lawler ,1995). They help make each other more successful. Companies with more extensive forms of employee involvement in the forms of quality teams or self-directed teams, reported higher outcomes from their TQM programs than the companies with less employee involvement. Correspondingly, employee involvement programs are more successful when they are used in conjunction with TQM programs.

QCCs in 1990's and Beyond

The story of Quality Circles is by no means complete. Although in the 1990's quality circle boom has been declining, it is clear that group or team activities of workers are essential (Noriaki ,1995). Quality Circles have no cultural or economic boundaries. The underlying philosophy can work in any society. All that is needed is a strong will and determination. The world is in constant turmoil and no one can stand still and hope to get rid of the many problems confronting business today. There is a need for a re-orientation in the concerns of the management, specifically a shift from a predominant concerns

with controlling to a predominant concern with learning. The roots of the quality movement lie in assumptions about people, organizations and management that have one unifying theme that is to make continual learning a way of organizational life. This can only be achieved by moving away from the traditional authoritarian command and control hierarchy where the top thinks and the bottom acts, to merge thinking and acting at all levels.

Team Learning

According to Senge (1993), a director of Organizational Learning Center at MIT, in approaching the third wave of quality, greater emphasis has to be given to building the organization as a learning institution. Team learning is going to prevail for as long as business is changing. Ultimately learning that matters is the learning of groups of people who need one another to act. QCC roles have to be enhanced in the pursuit of progressing into the third wave to achieve organizational symphony. The expectations of the management would have to be different in preparing the organization for the development of its most valuable asset, for future survival.

Increased Empowerment

As QCCare implemented n other parts of the world different forms or types of circles will be adapted to suit the particular society in which they are developed (Wallace 1994). Empowering people empowers the organization, provided the individuals are deeply aligned around a common sense of purpose and shared vision (Byham, Wellins and Wilson, 1991). The 1993 ASQC/Gallup Survey of a sample of 1293 full time employed

American adults , indicated that an increased proportion of employees (74%) have been involved in significant decision about their jobs since workers were last questioned in 1990 (66%).

Cross Functional/ Cross Boundaries

The move towards cross functions and even cross boundaries need to be initiated as the network of dependence gets larger (Shaskin, 1994). It was stated that insufficient cross functional coordination can undermine company policy (Noriaki, 1995). Commitment and participation from every level is also vital in making the QCC concept alive for the benefit of the organization. By having all people of all levels, especially middle and higher level management to be involved, the authoritarian style of command and control could be lessened.

Complex Problems

The types of problems the QCC solved are expected to be more complex in order to facilitate continuous improvement (Tomas, 1994). Juran (1973)in his article 'The Quality Circle Phenomenon', predicted that the QC circle concept can be broaden considerably to deal with non-quality problems as well as quality problems. As the emphasis today is on research and development of new products, there is now an interest in developing total quality in the upstream portion of the production process, not solely in manufacturing as predicted by Prof. Ishikawa in 1985.

Future Directions

In the future, QCCs will face the challenge from 3 major trends namely, information technology, automation and robotization and training requirements (Perigord 1990 and Karatsu ,1988). Information technology will replace humans in the information and decision making process (Laudon & Laudon 1996). The same goes with automation; where overall number of personnel is reduced and the personnel structure is altered. The production jobs are replaced by supervisory and design function (Garvin, 1988). With these challenges. the need for training is inevitable. We are faced with irreversible trend to which all training must be adapted. Juran (1987) explained that, given the parallel relationship between knowledge required by the job and the knowledge acquired on the job, all company employees must be trained each year so as to keep pace with increasing complexity. Figure 4 reflects the relationship of training requirements versus the expected changes in technology.

Figure 4: Level of Knowledege Requirement Versus Changes in Technology

Source: Juran, 1987

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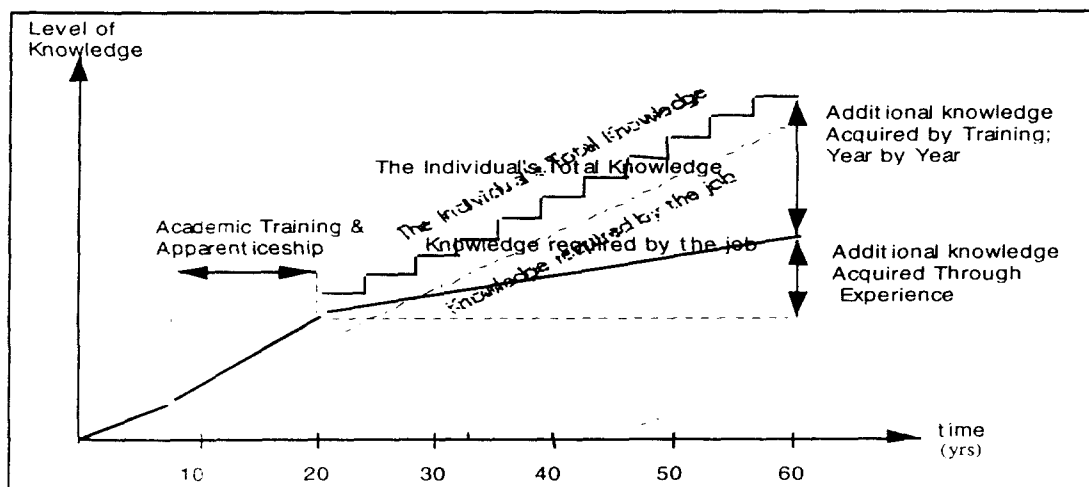
The implication of these trends to the organization will be very challenging and organizations and employees must be prepared to face them. Although there will be certain changes, the problem solving teams concept like the QCC will still play a major role in helping the organizations excel in the future. The future QCCs will then be those which are more empowered, more technically competent and perhaps assuming more important roles in the organization.