CHAPTER 2
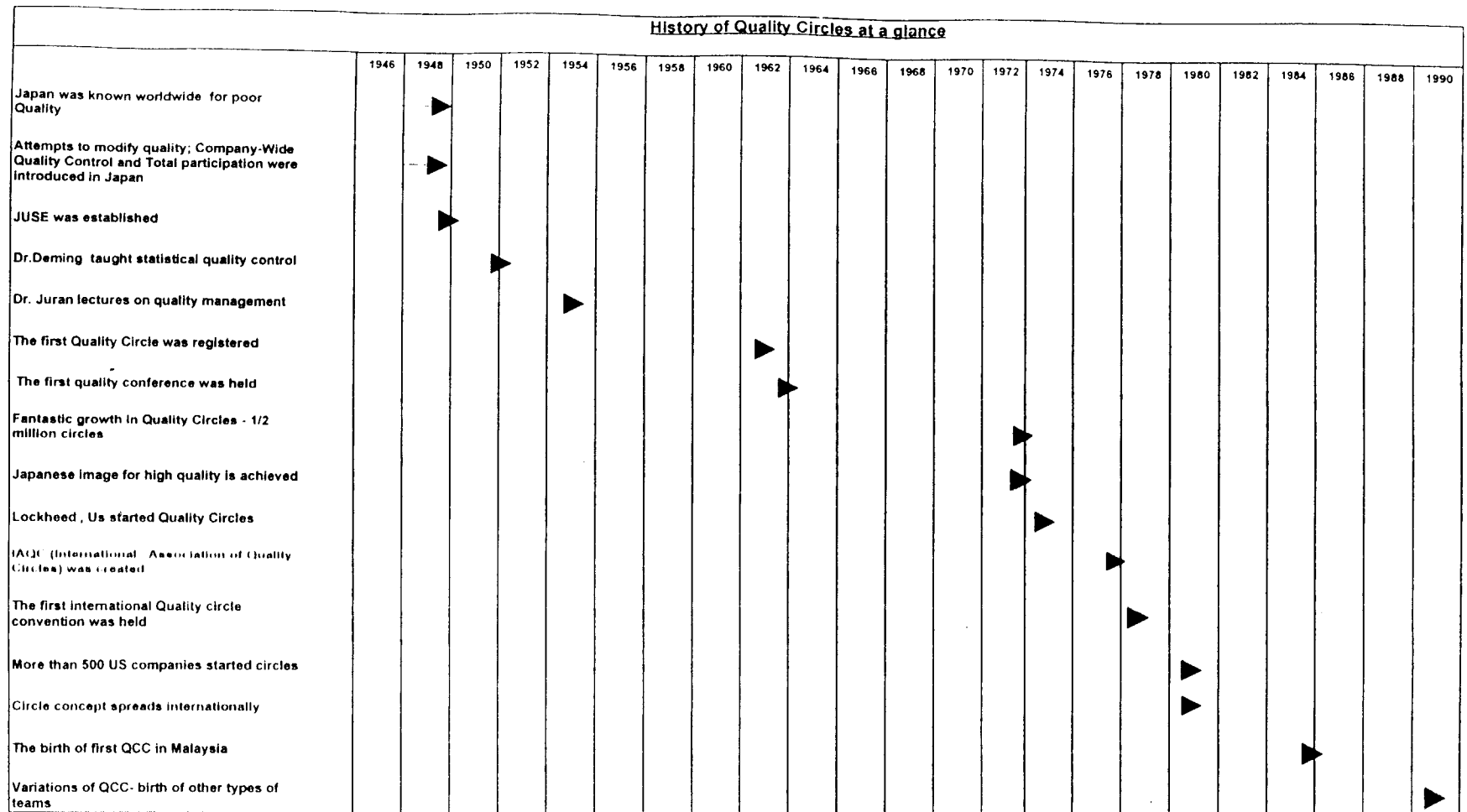
LITERATURE REVIEWS

History of Development of Quality Control Circles

The world is familiar with the miracle of Japan and knows that it started off with an impact in 1950s. Before that, the quality of Japanese consumer goods had earned a reputation for being shoddy and cheap. In order to change the world's opinion, a major transformation had to be made in Japan. Japanese industrial leaders recognized this and were committed towards instituting the changes. The efforts paid off when the dependability of the Japanese consumer goods improved in 1950s and by 1954 they had captured markets in most part of the world. It is therefore appropriate to look into some of the forces that caused the economic explosion of Japan .

The formation of The Union of Japanese Science and Engineering, better known as JUSE, was said to be the main catalyst for its economic recovery. The Japanese had turned to the country with the best expertise and know-how. The acknowledged world leader at the time was the United States. Two of the Americans who provided JUSE the training were W. Edward Deming, in statistical quality control and Dr. Joseph M. Juran, in quality management. These gentlemen made their initial contributions to the Japanese in the early 1950s (Gryna. 1981). Dr. Juran made his first visit to Japan in 1954 and his masterful

Figure 1 : History of Quality Circles

History of Quality Circles at a glance

Event	Year
Japan was known worldwide for poor Quality	► 1948
Attempts to modify quality; Company-Wide Quality Control and Total participation were introduced in Japan	► 1948
JUSE was established	► 1948
Dr.Deming taught statistical quality control	► 1950
Dr. Juran lectures on quality management	► 1954
The first Quality Circle was registered	► 1962
The first quality conference was held	► 1962
Fantastic growth in Quality Circles - 1/2 million circles	► 1972
Japanese image for high quality is achieved	► 1972
Lockheed , Us started Quality Circles	► 1974
IAQC (International Association of Quality Circles) was created	► 1976
The first international Quality circle convention was held	► 1978
More than 500 US companies started circles	► 1980
Circle concept spreads internationally	► 1980
The birth of first QCC in Malaysia	► 1986
Variations of QCC- birth of other types of teams	► 1990

Timeline columns: 1946, 1948, 1950, 1952, 1954, 1956, 1958, 1960, 1962, 1964, 1966, 1968, 1970, 1972, 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990

Source: Researcher's Compilation from Literature Reviews

teaching gave the Japanese new insights into on the meaning of quality and the management's responsibility in achieving it.

Under the sponsorship of (JUSE), Dr. Kaoru Ishikawa tied together several theories of behavioral scientists such as Maslow, Herzberg, and McGregor, to the quality sciences introduced by Deming and Dr. Juran. Then in 1961, he formalized the QC Circles. A QC Circle is the natural Japanese way of working together. Dr. Ishikawa brought to the attention of management the importance of making full use of the successes of small groups of workers in the elimination of special causes of variability of product and in improvement of system through changes in tools, design and in scheduling as well as in looking for alternatives of the production process. Accomplishments of a QC Circle in one area may well have wide application throughout the company and in other companies. It is the responsibility of the management to carry the enthusiasm from one success to another.

In an insecure workplace, where people have a suspicion that they will be dumped when business slacks off, the QC circles have little chance of success. A QC circle requires months to get into action. Participation of QC circles does not only involve members of an organization but it extends to the suppliers or sub-contractors and customers as well. This same sentiment still pervades in the Japanese industries. No elaboration of reasons why Japanese workers work for the good of the company is necessary. It is also important to note that the bond between vendor and purchaser is almost as strong as the bond between employee and company, with the same mutual trust between them. As a

comparison, most of the QC circles in America are management's hope for a way out of solving problems or formed out of desperation. They will accomplish nothing unless the management is prepared to act on suggestions from the QC circles. Unfortunately, most reports of successful results from the QC circles in United States are rediscovery of the Hawthorne effect (Gyrna, 1981).

Quality circles seemed to have peaked in middle of the 1980s in the Western countries. Companies had initially defined quality problems in relation to workers' morale and workmanship. They believed that those problems could be solved by quality circles. Gradually, many of them learned that promoting quality circles alone was insufficient to achieve the quality they wanted. This caused the quality circle activities to decline. The American companies, especially looked at alternative activities that emphasized on company-wide implementation of quality activities in the 1990's, such as Business Reengineering and Total Quality Management programs. Nevertheless, Dr.Kano Noriaki (1993), a well-known professor in quality management field, believed that group activities of workers , such as quality circles are essential in implementating quality. He stated that the American companies specifically and other companies generally, will need to reactivate quality circles as part of the future development of TQM.

Philosophy Of Quality Control Circles

The QC concept is simple to state but profound in its implications (Juran. 1973): He said,

"Quality circles are based upon the simple concept that nearly all people will take more pride and interest in their work if they are allowed to make meaningful contributions which influence decisions made about their work".

This philosophy, which is basic to quality circle success, has been adopted by leading companies using the QC process. Quality control circles involve the use of a company's most valuable and important resource, that is the workforce. According to Dewar (1979) of International Association of Quality Circles, the concept is a way of "capturing the creative and innovative power that lies within the workforce".

Rieker (1979) defined a quality circle as a group of volunteer workers, "from the same group who usually meet for an hour each week to discuss problems, investigate causes, recommend solutions and take corrective action when authority is in their purview" . This is supported by Dewar (1979), "when fully implemented, quality circles create in the individual a sense of participation and contribution" (Dewar, 1979). Juran (1973) in describing the QC Circles phenomenon, regarded the QC Circle movement as ' a tour de force ' in management leadership .

Characteristics of Quality Control Circle

There are seven fundamental characteristics (Dewar 1980 , Ross and Ross 1982, Konz 1979, Gryna 1981) of a QC circles and a description of each of them are as follows:

Voluntary Membership.

An important factor of the quality circle is the spirit of voluntarism. This according to Juran (1973) characterizes most motivational programs. This unique feature, which seems necessary for success, assures the worker that this is not a program "sent down from upstairs by management." (Perigord, 1990). QC circle activities are promoted by paying due respect to its voluntary nature. Consequently, circle activities reach a point where everyone participates voluntary to carry out activities. The ultimate stage of QC circle activities can be described as voluntary, but the process requires appropriate support. According to Prof. Ishikawa (1980), ideally QC circles should run in such a way that peoples' voluntary motives and activities are respected within a framework of and organizational function. He went on to say that if QCC is not a voluntary activity, the people involved will be demoralized due to compulsion and the team will not last long.

Training

QC circles will solve problems faster than otherwise they would, with the proper training techniques (Dewar, 1980). This also confirmed the statement by Dr. Ishikawa that "a ton of enthusiasm is worthless unless backed by an ounce of scientific knowledge" (1980). A QC circle uses simple statistical techniques such as scatter diagrams, Pareto diagrams, control charts, to name a few, to discover possible sources of problems and how they can be solved. Training should be given to members of the QC in the use of various measurement techniques. For more advanced members, training are given in the areas of sampling, data collection, data arrangement, scatter diagrams and other techniques (Asaka, 1990).

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Group Process & Team Problem Solving

QC circles are formed by the people working at the same workplace in order to develop themselves on an equal basis through quality control activities (Juran, 1973). The worker learns to work with one another in a spirit of cooperation and becomes a member of the social unit of the circle. Through the leader's efforts, a sense of belonging is accomplished and a spirit of teamwork exists. Circle leaders are instructed in group dynamics so that they may orchestrate the activities. The ideal group activity requires individuals to be respected; initiative and independence of each member should be respected and information should be shared by all members (Ishikawa, 1980). The process of problem solving contributes to the profitability of the firm and also provides an opportunity for workers to be creative, thus furnishing a motivational base as well. Through this method of creative problem solving, genuine enthusiasm for innovative suggestions is more likely to emerge.

Continuous Process

The quality circle is not a response to a specific problem; rather it is a continuous study process occurring in the work place. The circle does not wait for some problem to be presented to it but continuously looks for problems or ways to improve quality and productivity. Continuous improvement requires active involvement of everyone, especially in identifying opportunities for improvement (Spenley, 1994). According to Jones and McBride (1990). Circles are not an appropriate way to deal with a crisis. Circles are more successful when they become a permanent part of the way the organization operates.

Supportive Management

The management must be willing to devote time and attention on the circle's progress. It should also include the financial support for the operation costs, implementation of recommendations by the circle and sponsorship of training seminars. Nevertheless Juran (1973) warned that while participation in the QC circles is voluntary, the existence of such circles raises practical question of how to coordinate the work of circles with that of the hierarchy. The kind of support, according to Dewar (1980), should have certain qualities namely it should be at the highest level in the organization. This is also supported by Perigord (1990) and Crosby (1996).

Recognition Provided ·

Firms with quality circles have generally found that participating workers have an enormous craving for recognition. The means of giving recognition was found to be an added problem facing the organization (Ingle, 1982). Recognition needs can be met with the presentation of their recommendations to the management, meetings in the management boardroom, giving publicity in the organization newsletter and offering financial rewards(Dewar 1980, Ross and Ross 1982. Gururaj 1996).

Meetings On Company Time

The meeting should be scheduled regularly and not held only when there is a problem. Circles should meet at least once a week to discuss. analyze and propose solutions to quality or production related problems. The voluntary nature of the circles have provided the impetus for circles to meet out of their own initiatives (Ishikawa, 1980). There are

circles that hold meetings out-of-hours without being paid. This practice however, is not a popular practice in the Western culture, unless negotiated through unions (Juran, 1973).

If we look back 15 years or so, teams were just beginning to grow in popularity and the form most teams took was similar. Although, problem -solving teams such as the QCCs were on the right track, they did not go far enough in getting employees involved in work related decision and process. In the 1990's various experimentations with different types of teams, mostly built upon one another, were undertaken. As a result, some variations of team concept were developed. Robbins (1996) introduced two types of teams; namely the self directed team and the cross functional teams. Other types are the Total Quality Service teams, self-managed teams, small group activities (SGA) teams (Conrad & Murphy 1995, Fukuda 1994). Whatever they called themselves, they shared common conceptual underpinnings and they were usually built upon another's deficiencies.

One of the variations to the QCC is the Participative Problem Solving (PPS) Teams which will be the main focus of the case study. In principle, there are no significant difference between the QCC and PPS teams. However, the main difference lies on the scope of problems that they solved. QCC usually solved specifically problems on quality, delivery of the products and the services that the organization offer. PPS built and extended the quality circle concept by recognizing that a problem may be the result of more systemic issues, requiring a look at the entire business process (Conrad & Murphy, 1995). The PPS tends to be more self-managed and cross functional in nature. According to the Bill Wiesz, the Vice Chairman of Motorola, in his article on business

leadership (1988), the participative nature of PPS is slightly different from the quality circle, because it involves all levels of the organization from the production line right up to the managers. It is horizontal as well as involving all functional departments.

No matter how group activities are described , what names the teams adopt, the practice of creating teams in the workplace is rapidly gaining momentum. It is creating a management revolution (Conrad & Murphy 1995, Robbins 1996) It all started with the QCC philosophies and from there on, changes are made in order to adapt to the requirements of organization in this era.