

CEM 515 CONSTRUCTION QUALITY ASSURANCE

TERM PAPER

**TITLE : IMPLEMENTING TQM AND CREATING ITS
ENVIRONMENT**

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PROJECT

IMPLEMENTING TQM AND CREATING ITS ENVIRONMENT

Purpose:

Implementing Total Quality Management and creating its Environment to face the challenges and availing opportunities in upcoming era.

ABSTRACT :

In this paper, Total Quality Management as an environment at work place will be discussed and assessed.

It is argued that accomplishment of Total Quality Management as a life-long learning process is determined by existence of four pillars;

- 1) The ability to learn to know,
- 2) The ability to learn to do,
- 3) The ability to learn to live together,
- 4) The ability to learn to be.

Life long learning process depends upon frames of references of learners and therefore cultural background would be moderating factor and discussing the life long learning process. Life long learning processes at work place flavored by cultural diversities. TQM Life long learning process as an environment will be discussed in terms of cultural differences. The Total quality life long learning and Implementation involves both formal and informal learning types. It is suggested that informal learning would accomplish more transfer of tacit knowledge, and thus TQM life long learning and implementation should consist more informal learning. TQM was first introduced and implemented in Japan and much later the Western World began putting it into practice. TQM environment is developing a process where people share experiences and create knowledge such as shared mental models, technical skills and competence. Based on observations, it has been suggested that TQM is more successful in Japan & other Asian countries than America & Europe.

INTRODUCTION:

Life long learning is a process that can be done in almost every scene of life. At workplace, we learn how to accomplish certain tasks, how to behave in making decisions, how to treat other people within the organization, and how to cope with everlasting pages. Hayes (1997) stated that if a company is to develop the ability of continuous self-renewal, it's real battle lies in changing individual organization' members behaviors and actions. Therefore, if an organization is to respond successfully to rapidly

changing circumstances, the process is dependent upon people in the organization to forge for the new path to progress. It is suggested by Scholars that one way of facilitating this process is to create a learning organization where people are continually learning how to learn together. Organizational learning refers to a group of people learning new processes, practices and structures in order to re-organize the work. Cultural difference plays an important role in implementing the process. In past, there were some resistance by Eastern countries in adopting Western practices due to cultural difference. The way culture influences decisions would be through the reasons that individuals recruit when required to explain their choices. Some anomalies of famous theories such as, Maslow's theory of motivation may occur due to cultural difference. Hofstede (1980), suggest that Maslow's theory of motivation stating that human needs will go in order from basic needs to the highest needs of self actualizations does not hold workers outside the US. For instance, in country of high uncertainty avoidance such as Japan as compared with lower uncertainty avoidance countries such as US, Security motivates most workers more strongly that does self-actualization. Adler (1986) found that an individual's frame of reference would determine the order of importance of the individual's needs. It has also been found that one's frame of reference is in part determined by ones culture. Thus an individuals needs to learn are partially bound by culture. It is quite possible that tardiness in adopting the Japanese style TQM by American companies was due to this contemplation. It was until the world recognized the advantages and results of outstanding Japanese firms applying TQM, the American companies began to learn and implement the practice.

Total Quality Management: Life Long Learning at Workplace

Total Quality Management is a collection of methods and practices an organization uses in an attempt to achieve total quality. TQM does not represent a specific method, or set of methods, nor does it appear to represent a theory for transformation of organizations. The definition of term quality itself has progressed from “Meeting customer satisfaction” meeting and exceeding customer expectation. Deming (1982) points out of the many innovations have occurred because the creator of the product was able to develop a new idea that was not even imagined by the customer.

The word “Total Quality” used together are usually meant to recognize that real quality requires all elements of organization to work together toward achieving that end. It means to strive for excellence in every thing an organization does. Total quality management refers to collection of practices. Originally TQM was first introduced in Japan in 1970’s. The founders of TQM were not all Japanese. In fact, some of them were westerns. However, TQM was not popular in western world at first. US expert as such as Deming accompanying allied occupation forces began to teach quality control to Japanese, and in Japan today from

production employee to CEO everyone is knowledgeable in good quality techniques. The adoption of TQM in Japan resulted Japan in becoming dominant in numerous quality sensitive International markets. Good quality also avoids the high cost of re-work, scrap, and warranty work, bad feelings and finger pointing within the firm, and loss of customer. These factors translate into lower prices for Japanese goods and healthy environment for further improvements.

Components and Method of TQM :

TQM consists of many components and method such as:

Deming 14 Principles (1982) of Total Quality Management.

As the father of TQM Deming formulated the man believes required in implementing TQM

- 1) Create Constancy of purpose toward improvement of product and service with a plan to become competitive and to stay in business
- 2) Adopt new philosophy . We are in new economic age
- 3) Seize dependencies on mass inspection. Require, instead, statistical evidence that quality is built-in.
- 4) End the practice of awarding business on the basis of price tags.
- 5) Find problems. It is management job to work continually on the system.
- 6) Institute modern method of training on the job

- 7) The responsibility of foremen must be change from sheer numbers to quality which will automatically improve productivity.
- 8) Drive out fear so that everyone may work effectively for the company.
- 9) Breakdown barriers between the departments
- 10) Eliminate numerical goals, posters and slogans for work force, asking for new level of productivity without providing matters.
- 11) Eliminate work standards that prescribe numerical quotas.
- 12) Eliminate barriers that stand between worker and his pride of accomplishment.
- 13) Institute education and training.
- 14) Create a structure on top management that will push every day on the above points.

Quality Circles;

The quality circle was originated in Japan. It is a small work group that meets periodically to discuss ways to improve quality, productivity or the work environment. Management assigns problems to circles, the circle defines and redefines problem in project.

Just in Time Production:

A system of managing operations with little or no delay time or idle inventories between one process and next with the purpose of efficiency and therefore optimizing the quality. The idea is that the firm should keep a minimum level of inventory on hand, relying on suppliers to furnish parts just in time for them to be assembled. Although a large inventory may not be the bad idea when interest rates are low, when interest rates are high, they become very costly.

It should be viewed broadly as a procedure for helping companies to manage and reduce their total processing times and therefore improve quality.

Supplier customer relationships to ensure Total Quality Zero Defects as a proper goal of Quality Program.

Out of the concept of total quality management, which is a company wide system approach to quality, has come a new philosophy of 'love the supplier'(Scott et al ,1999). Under this approach , the traditional antagonistic relationship between suppliers and customers, where suppliers are coldly dropped when a cheaper source can be found, is being replaced by a new order in customer supplier relationship. In effect, what began as an effort to increase quality through closer supplier relations has turned to have unexpected benefits. Close customer relationship have helped to

trim costs, in part, by allowing for the production of higher quality products. This close customer supplier relationship has allowed TQM philosophy to be passed across company boundaries to the suppliers, enabling the firm to tap the supplier's expertise in designing higher quality products.

Zero Defects

Proposed as the proper goal of the quality program, an alternative to the past practices of setting an acceptance quality(defect) level.

Philips B. Crosby (1979), former Corporate Vice President and Director of Quality Control at ITT Corporation, is developer of Zero Defects concept.

KAIZEN,

A Japanese term meaning continual improvement involving everyone. It is one of the most important concepts in Japanese management. It means working each and every day to make improvements in all processes of organization. Such environment may reap great gains over time.

Why Implementing and Adopting Total Quality Management :

Once a company adopts Total Quality Management progress for itself and its suppliers, the quality problem might disappear and defects become rare occurrences. While improving quality reduces the need for holding inventory, reduced inventory also leads to higher quality. Long set up and changeover times of equipment provide the second source of demand for high inventory levels in traditional manufacturing systems.

The difference in optimal economic order quantity batch sizes between US Automobile Manufacturers that took six hours to change stamping dies and a comparable Japanese firm that took only four to six minutes was enormous.

Beyond these obvious financing savings, companies also discovered large space savings. Having eliminated work-in-process goods, companies found another factory inside their old factory.

The practice of Total Quality Management scrutinized by means of four pillars of Life-long Learning:

1: Learning to know:

Awareness is the beginning of learning to know.

Total quality management contains some methods which should be shared within all members of the organization. It is important that all members of the

organization are knowledgeable of what TQM really is. One of the first things that Deming (1982) taught in exercising TQM: is adopting the new philosophy, realizing that today is the new economic age. Commonly accepted levels of delays, mistakes, defective materials and defective workmanship are no longer tolerable. This awareness should be beginning of TQM learning process. In exercising TQM, all employees should not only have information on what TQM is, but also gain knowledge, the know-what, the know-why, Know-how, and Know-who of TQM. Before the practices of TQM in 1970s, Japanese products were considered products of lower quality in the world market. In Japan, where people are thought to work hard to survive , the new philosophy might be easier under the shadow of japans huge loss in second world war, and the motivation to excel in the world market. Looking at the success gained by the Japanese firms implementing TQM, US firms were beginning to adopt this new philosophy.

Knowledge

Knowledge is a deeper concept than information. The term knowledge itself is arguable. Barnett (2000) noted that in western tradition knowledge has come to stand for ordered conceptual frame works, providing systematic holds on the world, expressed in written and spoken language. The idea of knowledge contains elements of universality. Meanwhile, Peat (1995) described that knowledge can be seen as information that comes with insights, framed experience,

judgment, and values, thus contain locality. Traditional cultures represent a different form of knowledge expressed in written or spoken language, and consciously or unconsciously, traditional people educate their children how to live in traditional life. People all over the world learn formally or informally. In some sense knowledge represents and therefore offers reliable source basis for action. Clarke & Rollo (2001) refer knowledge as the body of understanding and skills that is mentally constructed by people. Business organizations are coming to view that knowledge is their most valuable resource. They are realizing that in order to remain competitive they must explicitly manage their intellectual resources and capabilities embedded in knowledge. It makes sense that a firm that knows more about its customers, products, technologies and markets, and their linkages should perform better(Zack, 1999). TQM as a system encourages people in the organization to acknowledge their environment specifically and communicate the information effectively. In implementing TQM, each member of organization learns to know their customers, suppliers, all stake-holders and other specific information altogether. These types of information are considered as company specific knowledge that enables TQM optimizing the company's value.

1. How to Learn to Know:

In initiating TQM, all levels employee would be trained on 'quality' courses and trainings. In this early stage, the process of learning to know is usually formal as classes are formed and formal instructors are assigned to share the total quality knowledge. Transfer of knowledge is mostly limited to mere theoretical knowledge.

2: Learning to Do:

Wisdom could be described as the best use of knowledge (Clarke, Rollo, 2001). Wisdom is necessary to determine which process to focus on in order to achieve organizational objectives. After the members learn to know what TQM is, they have to learn how to do and implement it in the workplace wisely.

From Skill to Competence, Top Management Commitment:

Skill only not enough in the TQM process. All members should excel in their very own vicinity. The goal of all TQM members should be creating competence. Top

management and shareholders should commit to the TQM application and to ultimate goal, producing competence, not skill. Once the management and the share holder were committed to implement TQM, they have to communicate clearly this new direction to all employees and to, make sure that everyone in the company understand the TQM strategies thoroughly and acquires competence, not merely the skill. Peterson (1999) a firm's top management must have the passion for TQM application. Without this sustain passion, top management's attention and energy would be diverted to other pressing needs. In this learning to do process, senior members teach juniors all to gain competence in TQM. As quarter 1996 stated, successful implementation occurs in companies where Executives 'walk the talk', teaching new behaviors by example. The determinant of success of enterprises is ever more reliant upon their effectiveness in gathering and utilizing knowledge, that is, their competence.

In exercising TQM, companies require good co-ordination of complex activities, such as manufacturing and procurement, and therefore competent employees are needed to operate the system. Top Management role in demonstrating examples is the key to gain competence among TQM members.

More Informal learning instigates more tacit knowledge transferred:

In implementing TQM companies develop formal organized learning Support, such as quality circles, mentoring, visits and formal educational training. In TQM,

quality circles as formal small groups are scheduled to meet in a regular basis to talk about problems, evaluations, and other things involving quality. These groups might work in certain cultures as Japan and other Asian Countries. However, it may not work that well in Western World .The more formal the meeting, the less tacit knowledge transferred. Argyris (1994) of Harvard University also stated that correctly used communication tools such as focus groups actually inhibit the learning and communication that corporations now demand of managers and employees. Those formal communication tools do not encourage individual accountability or allow the revelation of threatening or embarrassing information. Tacit knowledge is important to spread among all TQM members, as they not only have to gain skills but also competence. Therefore quality circles in TQM should be not too formal and gradually developed interpersonal support, which might extend beyond work place. The formal quality circles at work become more informal; if environment is bound by personal friendship hence transfer of tacit knowledge would be less difficult. Defect could mean the termination of wealth leading to death. Consequently, zero defects is understandable among Japanese workers. They would learned to do TQM with clear goal of achieving prime quality, for their way to survive.

3: Learning to Be:

Knowledge produced by individuals reaches its full potential to create economic value when it becomes embedded in organizational routines. It is implied that the results of

learning process can be observed in how learner's become the features they have learned.

To be the member of TQM

All members should learn to be part of Total Quality Management Team. In TQM, there is no useless member. Everyone is useful and everyone is important. In Deming's 14 points, some of the points stress on attitudes and characters of people.

- Adopt the new philosophy, we are in a new economics age. We can no longer live with commonly accepted levels of delays, mistakes, defectives materials, and defective workmanship. TQM members should be enlightened with the vision of the new economic age.
- Drive-out fear, so that everyone may work effectively for the company. TQM members should be individuals working effectively without fear.
- The responsibility of foreman must be changed from sheer members to quality, which will automatically improve productivity. Forman should be 'quality individuals'.
- Breakdown barriers between departments. People in research , design sales, and production must work as a team, to foresee problems of production that may be

encountered with various materials and specifications. TQM members should consider themselves as a team achieving a common goal: total quality.]

- Remove barriers that stand between the hourly worker and his right to pride of workmanship. TQM members should be proud of being TQM members.

It is obvious that Deming stated the characteristics of the TQM members as an important requirement in contributing success to TQM. The workers and management team in the TQM are required to 'be' true members with certain characteristics, not merely to work and be able to do things. Some companies create certain specific features distinguishing the company's TQM members from other companies to build the sense of pride and sense of belonging. The management constantly imposes total quality character building on workers, as TQM can only be success supported by well-built total quality characters of the team. TQM is not just a method that can be learned, but the implementation needs to be nurtured every day to build positive attitudes towards the success of maximizing quality. The people within the organization should learn how to be supportive members of the TQM. Building a community of TQM is the hardest part of implementing TQM. Community – shared understanding and access to the work and minds of others is the principal element in an innovation strategy (Compaq, 1999). Being knowledge-able of TQM does not mean understanding all the information about TQM. It covers

the institutionalization of the new behaviors, values and attitudes onto the organization's shared values and belief system on TQM. All members of the organization now are exposed to TQM and gain knowledge on how to utilize it for the purpose of the company's goal achievements, maximizing quality. The TQM members have their trademark as TQM members. While Deming (1982) insisted that there was no 'instant pudding' in implementing TQM, many western consultants are establishing themselves with a client suggested short-term gains. Because of this search for short-term gains, process improvement and reductions in cycle time became very popular and in some cases a final objective. Unfortunately, after they ran their short-term courses, many efforts collapsed and TQM was often declared a failure. In these cases, the so-called 'TQM members' are not really TQM members. They do not acquire the attitudes and characteristic of TQM members as Deming pointed.

Continuous Improvement a life-style

TQM is a long term process and it involves continuous improvement it require the change of attitude of employees. One very important characteristic required in TQM is the ability to improve continuously. This characteristic comes from the willingness to improve to the best. A very high standard should be set in order to push TQM members to continuously improve. All members should learn to have TQM life-style. An Argyris (1994) argued that

Western professionals are least able to learn because they have rarely experienced a learning related failure and are prone to defensive reasoning. This perhaps could be one of the biggest hindrance in implementing TQM in establish industrial world, as professionals unconsciously are not willing to change their life style and habit to some new things. TQM is a life style. Its is not merely a system of management. It involves all aspects of employees and management's life.

Loyalty and High Expectation as TQM Life-style

Lincoln (1989) compared employee work attitude and management practices in US and Japan which showed that satisfaction in Japan is lower but commitment and loyalty proved substantially higher than in US. The resulting picture of Japanese work attitudes as combining low job satisfaction and high organizational commitment might be an evidence that the discipline of Japanese work force does have some basis in the work attitudes of Japanese employees. With high commitment and loyalty, the Japanese would employee continuous improvement naturally this might explain the early successful implementation of total quality management as life long learning at work place in Japanese firms.

Japanese employees combination of high commitment couples with low satisfaction may imply a restless striving for perfection, an ongoing quest for fulfillment of lofty work values and company goals. The Japanese seem to color their evaluations of nearly everything with a large dose of

pessimism, humility and understatement. A Japanese child coming home from school with B for a test might get scolded for being failed to get A. An American child in the same condition might get rewarded for his achievement. It is arguable that Japanese would have a stronger coerce to learn life long , since their expectation is higher than the average Americans.

In TQM, high expectation combined with high loyalty is very important in creating prime quality. Scott et al (1999) showed an example experienced by General motors, a prominent American firm which has saved millions of dollars by going to just-in-time system. While implementing TQM, if there is a breakdown in the supply of inventory to system, the result can be catastrophic. In 1996 GM was hit by a strike that involved about 3,000 workers at two of its plants that produces brakes for the plants GM makes. As a result of not having brakes for the cars to put in cars, GM was forced to stop production and lay-off over 177,000 workers. Moreover, because GM used just-in-time inventory system, it did not take long for the shut down of the brake plant to affect all of GM's other operations. In Japan, this kind of strike among TQM members would hardly happen for TQM is their life style, and consequently they are loyal to the organization embedding TQM. It is argued that because of this reason Total Quality Management was first implemented in Japan long before it was in US. Implementing TQM is not easy as easy as expected. It needs a long life learning process, a continuous improvement, and high commitment to quality.

4: Learning to Live Together:

Scott It al (1999) described how TQM needs not only good system, but also an integrated life-style necessitating the ability to live together. Employee, customer and supplier involvements are essential to quality and organizational success. Such efforts must include participation by top management in order to have clear aim, redesign of products and process, innovation, plans and actions that support the organization's strategies. Senge (1993) argues that to excel in an increasingly complex and dynamic world, organizations will have to provide for and encourage individuals and teams in all levels of the organization to learn. He envisions 'learning organizations are places where people continually expand their capacity to create results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together'. In TQM, learning to live together is crucially important part of learning process as this management system need people supporting it.

The final and most important stage in TQM implementation is how to acclimatize a condition where all members live together in harmony to achieve the total quality.

Customer – Supplier – Employee Relationship in TQM

TQM techniques offer advantages in addition to satisfying customers and helping to succeed.

TQM brings suppliers, customers, managers and employees into the decision process. TQM is no longer simply applied to manufacturing, quality improvement programs now stress on customer focus, employee training and empowerment, top management support and commitment. TQM requires tacit knowledge embedded in a company practices and the people of organization.

It includes know-how, institute and informal communications that make-up a large part of company culture. Clarke and Rollo (2001) argued that tacit knowledge is experimental and communicated most effectively in face to face collaboration that obviously needs a harmonious relationship between all parties in TQM team. The above example about GM shutting down it's operation and laying off 177,000 workers merely due to strike done by 3000 workers shows that learning to live together would be substantial effort in implementing TQM

Structural Reflexivity in TQM

TQM claims to be a people oriented management's system, emphasizing satisfaction of organizational members as one of its core values, along with customer satisfaction and community well being. A built-in structural reflexivity would be formed in TQM learning with existence of circle relationship continuously evaluating quality, and a community as a whole forming an opinion on the quality of the organization. TQM is most successfully implemented within intelligence organizations. As editor Kenneth Leithwood (2000) distinguishes, there are organizations that are only smart i.e highly skilled, and there are those that are intelligent- that is, those with the capacity to learn new skills and knowledge acquiring competence.

Only intelligent organizations are capable of effectively implementing the structural reflexivity in TQM. The level of intelligence of an organization is determined by the intelligence of people within. TQM is effective as long as people involved can live together harmoniously within intelligent organizations.

CONCLUSION:

TQM implementation and creating its environment encloses four pillars of life-long learning for its continuous improvement process that should be done continuously.

As a process, the accomplishment of life-long learning in the form of TQM depends upon the people executing it. Interactions among people within and outside organization, how they inter-relate, inter-mingle, co-operate, and link-up one to another are factors contributing success to TQM. Living together is a matter of Socialism and Socialism is process of sharing experiences and creating tacit of knowledge such as shared mental models, technical skills and competence.

In conclusion, TQM is the only tool to achieve quality. No tool, TQM included, is effective if exercised improperly. TQM is optimally implemented in an organization which members are committed to a life-long learning process of improving continuously.

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