Review of tqm concept from quality gurus

An extensive literature review is done to explain the concept of TQM, which is extracted from four quality gurus namely; Deming, Juran, Crosby, and Ishikawa. Theories of these gurus are very essential in understanding the concept of TQM. Principles and practices of these gurus are explained in following section.

2. 5. 1 Deming Approach to TQM

The main theory of Deming's approach is to create an organizational system that wills faster cooperation and learning. This is to facilitate the process of management practices and implementation that leads to the improvement of the organizational process, products, and employee fulfillment, which are all essential to customer satisfaction (as cited in Zhang, 2000). According to Rvans and Dean (2000), Deming's philosophy is aimed to improve products and service by reducing the uncertainty and variation in design and manufacturing processes. Researchers explained that high variation will lead to inconsistencies in performance and as a result will represent poor quality.

Deming invented the plan, Do, Study, Act (PDSA) cycle or commonly known as Deming cycle to relate the production of a product with the consumers' need and to utilize the resources within the organization to fulfill those needs (Goetsch and Davis, 2000). It is a continuous cycle that requires the addition of new knowledge.

In addition, Deming's 14 points of management also received good reviews from the research society over the years. Ross (1999) indicated that a company must adopt the 14 points of his system at all levels of an organization. In retrospect, Dr. Deming has tailored some of the principles to

integrate into the current management style of organizations. Table 2. 4 lists out the Deming's 14 points of management.

Table 2. 4: Deming's 14 Principle of Management

No

Principles

1

Create constancy of purpose toward the improvement of products and service in order to become competitive, stay in business, and provide jobs.

2

Adopt the new philosophy. Management must learn that it is a new economic age and awaken to the challenge, learn their responsibilities, and take on leadership for change

3

Stop depending on inspection to achieve quality. Build in quality from start.

4

Start awarding contracts on the basic of low bids.

5

Improve continuously and forever the system of production and service, to improve quality and productivity, and thus constantly reduce costs.

6

Institute training on the job

7

Institute leadership. The purpose of leadership should be to help people and technology work better

8

Drive out fear so that everyone may work effectively.

9

Break down barriers between departments so that people can work as a team.

10

Eliminate slogans, exhortations, and targets for the workforce. They create adversarial relationship.

11

Eliminate quotas and management by objectives. Substitute leadership.

12

Remove barriers that rob employees of their pride of workmanship.

13

Institute a vigorous of education and self improvement.

14

Make the transformation everyone's job and put everyone to work on it.

Goetsh and Davis, 2000

2. 5. 2 Juran Approach to TQM

Juran's philosophy indicates that Total Quality Management is a system or activity that aims to delight customers, empower employees, increase the level of revenues, and reduce cost (as cited in Zhang, 2000). Deming's, alternatively, focuses on the employees' pride and their satisfaction. Juran posits that top-down management and technical methods are pertinent to manage organizations (Ross, 1999). Based on a special report published on Business week, an article entitled " Dueling Pioneer", suggest that Juran' contribution may be better than Deming's theory in the long term, primarily owing to the fact that Juran has a broader concept while Deming focuses on statistical process control which is technical-oriented (as cited in Ross, 1999). In this study, Deming believes that customer focus is essential for a company's success and quality is defined as " fitness for use". This is comprised of four categories which include quality of design, quality of conformance, availability, and field service.

A famous prescription by Juran is quality Trilogy (A registered trademark of Juran Institute). Here, researcher illustrates that quality can be managed through three important processes: Quality Planning, Quality Control, and Quality Improvement. Researcher articulates that problems are traceable in

an adequate planning process that will be sent trough a quality control process where a particular problem will be executed. This evidently will lead to the improvement process (Zhang, 2000). Figure 2. 1 summarizes the three managerial processes.

Figure 2. 1: Juran Trilogy

Quality Planning

Establish quality goals

Identify customers' needs

Develop product features that respond to the quality needs.

Develop systems and process that allow organization to produce these features.

Deploy the plans to operational levels.

Quality Control

Evaluate quality performance.

Compare performance with goals.

Act on the difference between performance and goals.

Quality Improvement

Develop the infrastructure necessary to make annual quality improvements.

Identify specific areas in need of improvement and implement it.

Establish a project team with responsibility for completing each improvement project.

Provide the resources, motivation, and training needs by the teams to diagnose the causes, stimulate establishment of remedies, and establish controls to hold the gains.

Zhang, 2000

2. 5. 3 Crosby Approach to TQM

Crosby's theory is considered as an important theory that contributed to quality management. Researcher's theory focuses on (1) Prevention of defect item; (2) Stress on individual conformance; (3) Clear customer focus and education for employee (Kanji, 1990). Crosby's theory also emphasizes on changing the organizational attitudes and behavior towards quality orientation. According to Taylor and Pearson (1994), Crosby's principles comprises of participation of all employees in the organization, stress on individual conformance, requirement and effective changes of corporate culture and motivation. Apart from that, Boaden (1997) also stated four important quality concepts from Crosby:

Conformance to requirement is the definition of quality, not elegance.

Prevention in the key to quality, not detection and assessment.

Performance standard if zero defects.

Price of non – conformance is the measurement of quality.

In addition, Crosby believes that a company would rather spend the lesser on prevention cost than bear the cost of detection and failure. As stipulated by Deming and Juran, Crosby also stressed the importance of quality improvement. Table 2. 5 below listed out the Crosby's 14 steps to quality improvement.

Table 2. 5: Crosby's 14 steps to Quality Improvement

Management Commitment

Quality Improvement Team

Measurement

Cost of Quality

Quality awareness

Correction action

Zero Defects plan

Quality education

Zero defects day

Goal setting

Error cause removed

Recognition

Quality councils

Repeat

Kanji, 1990

2. 5. 4 Ishikawa Approach to TQM

Ishikawa is the quality expert that addressed TQM as TQC which is Total Quality Control. Since the terms " management" and " Control" are pronounced as Kanri in Japanese, it implies linguistic ambiguity between " Quality Management" and " Quality Control" in the above context (as cited in Boaden, 1997). Ishikawa is a quality tool expert that participated to develop tools such as the (1) Pareto Chart; (2) Cause and Effect Diagram or known as Ishikawa Diadram; (3) Stratification Chart; (4) Scatter Diagram; (5) Check Sheet; (6) Histogram; and (7) Control Chart (Evans and Dean, 2000)

Ishikawa also stressed on continuous improvement and customer orientation where organization should keep a track log on what their customer like, their tastes, and applications (Dotchin and Oakland, 1992). As stipulated by Zhang (2000), the six concepts of Ishikawa are described as follows:

Company should put quality in the first place, not short term profits.

Company should focus on customer, not producer.

Company should break down the barrier of sectionalism of customer.

Company should use facts and data to make presentation by using statistical tools.

Company should apply the cross functional management.

2. 5. 5 Summary on Quality Gurus

Based on the concepts mentioned above, there remains on overarching idea that is shared by all of them, quality improvement. Quality improvement is necessary to lead a company to success. Although all of the experts mentioned above have different views on quality improvement, their intentions are the same. However, their fundamental approaches were slightly different. For instance, the approaches illustrated by Deming and Juran focus on detection and correction while Cosby's theory emphasizes on prevention than detection. All in all, all four theories are widely accepted and are still being used by many organizations. Theories like Deming's PDSA Cycle, Juran Trilogy, Crosby's 14 Steps to improvement, and Ishikawa's diagrams are still widely used to explain the fundamental concept of TQM.

2. 6 Review of Knowledge Sharing

" Knowledge as a resource of value creation, allows for exceptional marginal rates of productivity…., appreciating value with continuing use and sharing knowledge instead of depreciating value of tangible products or natural resources"

(As cited in Yang, 2007)

As illustrated in the above phrase, knowledge has to be shared in order to maintain and appreciate the value it has to offer as it will depreciate and vanish over time. Knowledge sharing is a process where knowledge and skills are transferred from one individual to another (Lin, 2007). Pangil and Nasurdin (2005) posit that a number of discussions and research about knowledge sharing is studies to comprehend key element in knowledge

management. According to Chua, (2003), a well managed company can capture knowledge from a segment of its organization, shared, and utilized in a completely different in its operations. Moreover, Nonaka (1994) stressed that the efficiency of knowledge sharing is based on the willingness of an individual to identify the knowledge he possess to the company and share it when it is required.

However, knowledge sharing among companies throughout the world does not seem to be well accepted among employees and organizations. One of the reason has been notified; where knowledge is being codified and expressed, it is easy to leak the important codified knowledge to the outside world and results in damages especially to an organization's competitive advantage, (Michailova and Husted, 2003). In addition, Mivhailova and husted (2003) conducted a research the Russian and Chinese industries and found that the reason employees refuse to share their knowledge are due to (1) cost involved during knowledge sharing; (2) the psychological fear that their personal value will drop after sharing their knowledge; and (3) accepting and respecting a strong hierarchical and former power. Nevertheless, according to Arduchvili et. al (2002) on his empirical research, the trend that employees do not want to share knowledge has nothing to do with selfish attempts but fear of misleading their colleagues. Despite the minor negative impact of knowledge sharing as above, many researchers have proven that knowledge sharing will bring more benefits than harm (Yang, 2007; Chua, 2003)

Effective knowledge sharing among organizational employees is useful to increase the long term sustainable competitive advantage (Lin, 2007; Yang,

2007; Ruhi, 2003) of the company as it encourages creativity and innovation (Hong et. al. 2004; Patrick and Dotsika, 2007). This creates a place that generates information for decision making. New knowledge will indirectly form while the old knowledge is shared through discussion, meetings, and informal chats (Fernie et. al. 2003). Ruhi(2003) discovered a number of benefit on effective knowledge sharing which includes (1) increase responsiveness to changes in the economic landscape; (2) dynamic creation and application of custom content; and (3) better manage business partner relationships. Additionally, a successful knowledge sharing environment will strategically alter employee attitudes towards promoting willingness and reliability in sharing knowledge among employees (Connelly and Kelloway, 2003). As there are a myriad of benefits in knowledge sharing, motivational programs should held frequently to encourage employees to share knowledge (Ardichvili et. al 2002)

2. 7 Relationship between TQM Practices and Knowledge Sharing

2. 7. 1 Leadership

Leadership in an organization can be defined as the ability of a role player to influence a team of employees to follow his instruction or missions that have been assigned to them in order to achieve the goals or objectives that been preset by the company (Bounds et. al. 1999). In addition, Zhang (2000) and House and Dessler (1974) illustrated leadership to commit the following:

Clarification of vision

Coaching management

Change of participation within company

Employee empowerment

Planning as well implementation

They implementing the organizational change to provide guidance and recognize employees' input such as ideas and suggestion as valuable resources. In parallel, a leader should move away from command managing to control oriented I order to make knowledge sharing successful (Macneil, 2004).

Knowledge sharing in an organization does not occur automatically. Thus, a leader plays an important role to ensure that it materializes (Ellinger and Bostrom, 1999). As mentioned above, team members are likely to be recognized by leaders due to their contribution and information, and this will indirectly motivate them to share their knowledge with others (Srivastava et. al. 2006). A leader should also empower and encourage employees to participate in the decision making process and organize meetings where team members are free to express their ideas and suggestions (Arnord et. al. 200). Through these avenues, employees will be aware that their knowledge shared is actually significant and indispensable. Moreover, Arnord et. al (2000) emphasized that leaders should always show censer to his or her team members' well being. By doing this, a connection of trust is built between the employee and leader so that knowledge sharing will be easier to function. Based on the literature findings above, the following hypothesis has been proposed:

Hypothesis 1: Leadership is positively associated with knowledge sharing.

2. 7. 2 Organizational Culture

As Gore Jr. (1999) mentioned in his research study, organizational culture is considered as key that leads to organizational success. It can create competitive advantage for a company by defining the boundaries of organization in a manner which will help in individual interaction such as sharing ideas and suggestion (Kefting and Frost, 1985). Holistically, organizational culture in the context of knowledge sharing can be described as a combination of theory, values, beliefs, ways of thinking, and acting that are shared by all the employees within the organization (Nor, 2005). In addition, researcher illustrate that a successful organizational environment is when the company's values are cultivated and glued into employees' beliefs where their behaviors are derived from social pressure but not from formal procedures and policies.

Kim and Lee Stipulate (2004). That there are three components in an organizational culture that cannot be neglected to affect knowledge management and his includes vision and goals, trust, and social network. As knowledge sharing is one of the key components is knowledge management, it is assumed that these three components are also significant. Clear organizational visions and goals will definitely help to encourage employees to share knowledge. This is due to the involvement and participation of employees that is essential to achieve the goals and missions of a company (O'Dell and Grayson, 1998). Alawi et. al (2007) and Von Krogh (1998) however, explained that interpersonal trust or trust between co -workers is

very important in organizational cultures that have strong influence over knowledge sharing. Moreover, (Gruenfeld et. al. 1996) stated that the existence of trust among employees is necessary in order to respond openly and share their knowledge. O'Dell and Grayson (1998) also highlighted that social interaction between individuals or groups ids helpful in knowledge sharing when different kinds of perspective and knowledge will be exchanged and transferred during the interaction. Based on this discussion, organizational culture is linked to with knowledge sharing and a hypothesis is formed.

Hypothesis 2: Organizational Culture is positively with knowledge sharing

2. 7. 3 Teamwork

Ideally, a company project would require a team of personnel that work together to accomplish the project goals. Thus, the composition of the team is crucial and leader needs to understand the abilities of each team member (Anderson, 1994). Generally, teamwork is defined as a work or project done by associates, where each member does a part in line with the efforts from subordinated in hierarchical levels (as cited in Macneil, 2003). However, Goh (2002) found that hierarchical levels of teamwork was obsolete and introduced a framework termed as horizontal communication. This goes beyond technology and encourages cress functional teamwork in the organization that will lead to knowledge transfer and exchange. She explained that employees can easily communication using horizontal cross-functional collaboration. Likewise, Lu et. Al. (2006) verified that good teamwork should contribute to knowledge sharing.

Although many academicians and researchers elucidate such as the increase in operations productivity (Kirkman and Rosen, 1999), improvement in the level of customer satisfaction (Kirkman and Rosen, 1999), enhancement of jobs satisfaction among employees (Wall et. at. 1986), and development of a better organizational commitment, there is one fundamental benefit of framework that they disregarded, and this is complementary to the team members' knowledge (as cited in Zarraga and Bonache, 2003). This can be clarified by analyzing the study of Wright et. Al.(1994) that explains in detail the idiosyncratic knowledge that is relevant to another member of the team and is transferred from an individual to that particular person. When this occurs a synergy is formed and results in a rise of a new knowledge to a higher level called group knowledge where combinations of unique skills of each team member are consolidated towards achieving missions and goals.

Nevertheless, the social dilemma theory explains that knowledge sharing might arise from a problem called public- goods dilemma (Cabrera and Cabrera, 2002). Researcher explains that when knowledge is shared by a volunteer's contribution to a team, every member in the team will benefit from it, whether they have made a contribution or not. In order to solve this problem, the company should plan rewarding strategy where people who share their knowledge will be rewarded. Therefore, a hypothesis is developed and stated as:

Hypothesis 3: Teamwork is positively associated with knowledge sharing.

2. 7. 4 Training and Development

Training and development is the development of new knowledge and skills as result of imparted knowledge (Goetsch and Davis, 2000). In relation to the context of knowledge sharing, Pangil and Nasurdin (2005) explained that training is crucial for knowledge sharing because it generates an opportunity for people gain new knowledge and share that knowledge. The role of training and development is expended to provide an environment that encourages and facilitates employees to share knowledge within the company. As discussed in the previous chapter, trust and motivation are very important in knowledge sharing. Thus, Goh (2002) stated that training in experimentation can help overcome constraints such as lack of increase an employee's job satisfaction (Barli et. al. 2005) and organizational commitment (Ahmad and Bakar, 2003). A formal and successful training will encourage employees to share their knowledge (Lamoureux, 2006).

Some options for formal and development programs can stem from hiring trainers and facilitators to provide in -house development programs, outstation training for employees, and e-learning courses that are provided by service providers (Lamourex, 2006). Researcher identified that formal training requires the trainee to perform after -action reviews and give suggestion. Thus, they will express, share and improve their knowledge to others during the training period. Apart from that, as the technology used is growing pervasively in today's corporate world, many tools are developed to faster information exchange. In this course, employee training is necessary

get themselves familiarized the technological tools. Stoddart (2001) stated that a good internet management practice will improve the usability and knowledge sharing capability among employees. In addition, Curry and Stancich (2000) elucidated that knowledge sharing will only work if the culture of the organization promotes it and real time applications such as computer conferencing are used. However, the most important element in accruing new knowledge is pointless without training. In short, training aids to ease the process of knowledge sharing. Surprisingly, there have been limited empirical evidences to prove that training can affect employees' to share knowledge. With that reason, a hypothesis is formed.

Hypothesis 4: Training and Development is positively associated with knowledge sharing.

2. 7. 5 Reward System

It is irrefutable that a proper reward system in an organization is necessary to keep the working environment alive. In general, reward system comes in a monetary from or recognition which is awarded to employees that achieve the goals and mission that has been preset by the company. To elucidate, from a neurobiological perspective, it is a set of structures that can regulate and control behavior by inducing rewards. Pangil and Nasudin (2005), Mc Dermott and O'Dell (2001), and Sharatt and Usoro (2003) agreed that a company's reward system can effectively motivate people towards knowledge sharing. Knowledge sharing is so important that companies today have included them into performance assessments (McDermott and O'Dell, 2001). Pangil and Nasudin (2005) describe two purposes of a strategic reward system. Firstly, employee will be rewarded by performing knowledge

sharing practices in the organization. Secondly, incentives will be given to those who continue perform desirable practices.

Reward system for knowledge sharing can be segmented into:

Individual Reward

Group Reward

Individual rewards are self -achieved where the company will award the individual who puts the most effort to share knowledge. According to Bartol and Srivastava (2002), value pay plans are suggested in individual award system to assess the performance of employees in knowledge sharing. In other words, financial enticement is used to motivate knowledge sharing (Hall, 2001). However, recognition sometimes can be more valuable than monetary rewards. For instance, the recognition of a journalist, researcher, or lecturer is considered as a reward to them after their efforts for publishing and teaching where knowledge sharing has created provocative change in the mindsets of people. Conversely, as discussed in the previous section, reward system is obligatory to ensure that every member in the team contributes to knowledge sharing (Zarraga and Bonache, 2003). Group reward system is slightly different from individual system, where rewards will be given based for group performance (Bartol and Srivastava, 2002). They explained that reward for group consist of profit sharing, gain sharing and stock ownership plans. As discussed above, reward system are crucial for practicing knowledge sharing, thus, following hypothesis is formed:

Hypothesis 5: Reward System is positively associated with knowledge sharing.

2. 7. 6 Customer Focus

Customer focus can be defines as the degree a company embarks to satisfy the customers' needs and expectations in continues manner (Zhang, 2000). From a business perspective, it is a known fact that the customer solely determines the success of a company. To illustrate that notion, general Motors, AT & T, and IBM had to reengineer their business function in order to meet the growing needs of their customers (Pinar, et. al. 2007). Thus, customer needs and expectations are considered as the baseline for any kind of business. Liao (2006) explained that sharing information on customer needs among co-workers or leaders could from as a competitive advantage to company. Apart from that, fast learning and knowledge transfer from an individual to another is what an organization must perform in order to maintain the products and services ahead of the needs and expectation of customers (Pfister, 2002)

" How do we get as many people as possible to create and transfer as much knowledge as possible in the best way possible in order to have a positive impact on our customer". (Buckman, 2004)

Buckman in his book " Building knowledge – Driven Organization" cited the above statement and explained that the full involvement, commitment, passion, to share and use the knowledge among employees are essential to satisfy customers (as cited in Buckman, 2004). Furthermore, requirements of customer can be tackled easily when knowledge is shared among team members. For an instance, Fang and Tsai (2005) illustrate and example; the

intensive care unit is a place where fast decision making is necessary as patients' lives are in danger. In this case, the customer's need would be the treatment while the service team which includes surgeons and consulting doctors will share knowledge among themselves to make resourceful decisions to save a patient's life. At present, there is a lack empirical research to examine the relationship between customer focus and knowledge sharing. Therefore, the following hypothesis is presented:

Hypothesis 6: Customer Focus is positively associated with knowledge sharing.

2. 7. 7 Research Framework

The relationship between the six dimensions of TQM and Knowledge Sharing is shown by Figure 2. 2 below. Formulation of this research framework was based on the hypothesis that's discussed above. In this research framework, TQM practices are independent variables and knowledge sharing is a dependent variable. This study will focus on the relationship of each TQM practices to knowledge sharing.

Figure 2. 3: Research Framework

Total Quality Management (TQM) Practices

Leadership (H1)

Organizational Culture (H2)

Teamwork (H3)

Training and Development (4)

Reward System (5)

Customer Focus (6)

Knowledge Sharing