

THE ROLE OF OCCUPATIONAL HEALTH AND SAFETY IN TOTAL QUALITY MANAGEMENT

Rustem Keleş
Sakarya Üniversitesi
Sakarya Vocational school
Sakarya/Turkey
Email: rkeles@sakarya.edu.tr

Keywords: Occupational health and safety, total quality management

ABSTRACT

Nowadays, occupational health and safety studies are becoming more important than ever before. The organizations should make every effort to increase the safety of working conditions for their employees. This in turn, increases the moral, motivation, working ethics etc. which directly influence the quality of the work carried out. This paper investigates the role of occupational health and safety in total quality management. The success of safety efforts may increase the success of total quality effort. The investigation is carried out in terms of employee participation, adaptive hazard management, innovative safety management, continuous improvements as well as integrated safety and quality management.

1. INTRODUCTION

Occupational Health and Safety (OHS) can simply be defined as providing secure working conditions for the employees. Employee safety issues are becoming more and more important every day, not only in working environments but also in every activity within the societies. Safety can be considered at both individual and institutional levels. Institutional safety is the total safety efforts and implementations throughout the whole organization taking both inside and outside environments into account. The concept of safety nowadays, needs to be expanding from individual safety to the institutional safety due to the complexity of events and equipments as well as their interrelationship between different branches of the organization. This obviously indicates the importance of total occupational health and safety where the word "total" means that safety issues to be considered at every level of the organization and in all activities without disregarding any organizational and production or service related issues. This clearly indicates that the organizations especially industrial companies need to manage all activities as compact as possible to create products with good quality in safety conditions and to sustain customer satisfaction. On the other hand, Total Quality Management (TQM) activities are conducted for making all employees and managers responsible for the quality of the products as well as processes to produce them. This paper analyses the role of OHS in terms of providing total quality into product and processes.

Total quality management, a very famous phrase of the 1980's, seeks to perfect control systems that produce and enforce uniformity within the products, parts, workers, suppliers

and the overall system of production. The problem is that a majority of this control is directed toward workers' bodies, souls, and spirits [Boje *et.al.*,1993]. The very famous terms of TQM can be described as the following;

Total means that the quality involves everyone and all activities within in the company including occupational safety activities.

Quality means the conformance to requirements that is to meet mainly the customer requirements which are strictly related to the production environment and its safety.

Management means that the quality can and must be managed rather than traditionally controlled.

Taking these definitions into account, TQM can be defined as a process for managing quality through making it a continuous way of life; a philosophy of perpetual improvement in everything done by all people within an organization. This means continuous improvements in all activities and increase in productive use of resources as well as workforce. Similarly, OHS also tries to perfect working environment to increase safety of workforce which in turn positively affects the productivity. This clearly indicates that OHS management has several common elements with total quality management and total hazard management. This was also be pointed out by Krause and Hidley (1989) and Weinstein (1996). In order to utilise the resources as effective as possible, same analysis should not be repeated in the same organizations. For this purpose, an integrated safety, health, environment, quality system have been proposed (Kuusisto,2000). However, most of the studies investigasting possible merge of TQM and OHS focuses on employing TQM principles for OHS purposes or embedding TQM within OHS processes. The other way around is also possible. There is an important role of the OHS implementations to make TQM processes work properly and become successful. This study will take the attention of the reader to latter as well as taking the former into account.

2. OCCUPATIONAL SAFETY AND HEALTH AND TOTAL QUALITY MANAGEMENT

There is a strict relationship between OHS and TQM activities within an roganization. They affect the sussess of each other. Having successfully implementing TQM may result succesfful OHS vice versa. Loushine at all (2003) have investigated the effect of these on each other in construction. A similar study is reported in EASHW (2002) for food industry. However, these studies mainly focusses on risk management aspects of both TQM and OHS. As indicated above, there are some more similarities and philosphies behind these two management approaches.

OHS provides several means to ensure the safety of employees within an organizations. Basic characteristics of a successful safety program include: management commitment, employee involvement, hazard identification and control, training and education, and some form of program of evaluation (OSHA, 1989) as well as risk management and continuous improvements in these areas. In addition to those there are several other characteristics which would be required for an efficient and effective OHS management. They should include; worksite cleanliness, emergency preparedness, and improved employee selection procedures etc. (Smith et al. 1978).

Similar to safety management, a successful total quality management requires management commitment, employee involvement, data collection/analysis and change implementation, training and education. Besides it is now quite obvious and well known by all scientific and industrial as well as social communities that the total quality management is based on teamworking and continuous improvement through performance monitoring. As in every other management issue, applying TQM principles for OHS would bring continuous improvements in safety processes reducing unsafety and hazardous situations preventing possible accidents. This was even realised by practical implementations (see for example, EASHW, 2000).

Based on the above discussion, TQM and OHS should not be considered as two different management systems. They should be considered perhaps under the umbrella of TQM as it could be considered as an overall management systems including every activity (due to the meaning of “total”) to secure over all business performance. In other words, the TQM’s operational sphere integrates aspects of workspace and occupational safety. That means successful safety and health management supports successful implementation of TQM. That is why big industrial organizations consider occupational safety and health as an integral part of their commercial success and prerequisite the highest possible standards of maintenance of environment, health, safety. Below some very important aspects of OHS which in turn increase the success of TQM are explained.

2.1. System design, development and training

OHS must be considered as an inherent component of work-system design, development and training. Add-on safety and health programs would not be as much effective as expected in reducing occupational injuries. Safety and health issues have to be considered during engineering a job, selecting employees, developing systems and training. At the job design, identifying and preventing high risk activities as well as high risk work practices would increase productivity through job modifications and design. TQM would not ask something more than increasing the productivity by this way. Similarly, creating a tool suitable for the employee is always better than fitting the employee to the tool. This would increase the use of the skill of employees increasing their efficiencies and effectiveness which really promotes the TQM. The same applies to training and employee selection processes.

2.2. Evaluating and improving safety processes

OHS processes are as much important as design, production, manufacturing and marketing etc. TQM may concern not only these but also OHS processes as well. Improving, for example, manufacturing processes without improving working condition would not produce productive manufacturing environment. Therefore creating safe and secure working conditions and providing occupational health to people in manufacturing area would definitely increase the moral of employees which in turn would increase their eagerness to improve their work. However, there has to be some standards and approaches to improve OHS processes as well. TQM techniques may be used for evaluating health and safety standards and practices as well as improving them. People undertaking this unit evaluation is expected to have a background in quality systems, including total quality management and/or ISO 9000 procedures.

2.3. Increasing employee participation and delegation

Employee participation is an important component of OHS implementations. Similar to process improvement, a number of formal approaches have been developed to create employee participation. Most of these approaches are also main sources of information for

quality improvement in TQM. Having successfully implementing these for OHS will create experience for similar implementations for other purposes within the organizations. Successful application may create some examples of best practices for others. Some major approaches used for measuring and ensuring employee participation are the following.

- Surveys
- Focus Groups (or safety workshops)
- Quality Circle (QC), sometimes referred to as 'safety circle'
- Team working thorough Total Quality Management

Note that these approaches are also effectively used in TQM

2.4. Total safety management and delegation of responsibility

Due to complexities and multi-functional aspects of the processes and products, the organizations should consider safety in every stage of their environments from design to product distribution. Safety should be secured in every aspects of activities even within the offices such as maintaining office equipments safely in order to prevent any accident that is due to happen in an unexpected situations such as earthquakes and other emergency cases. The term *total* in safety management has the same meaning of the word *total* in total quality management. To provide total safety, the management should dispath the authority and responsibility to all involved. This is also one of the main issues in good TQM implementations. TQM requires top managers to support the people below and authorize them to perform quality activities and keep them responsible for their actions. Having the people successfully implemented total safety management within every level of the organization may be a good example for spreading authority and responsibility within the organization and may support the total quality efforts as total quality efforts does not disregard safety programs and total safety efforts (Rahimi, 1995) Similarly, as TQM requires greater levels of organisation wide participation; greater commitment of resources to be given over to activities that are not directly related to core business activities such as safety management, successful safety implementations could reinforce TQM activists within the organizations towards the success.

2.5. Adaptive hazard management

Due to unexpected events and unavoidable circumstances, the employees would face potential hazards. There is a need for adaptive hazard management where hazard prevention activity is to be centred on the control of hazards at source in accordance with identifying, assessing and controlling frameworks. In the adaptive hazard management, a problem-solving focusing to employee involvement is directed to the management of key workplace hazards. This obviously requires a higher level of integration, or alignment, of health and safety with broader management systems. If an organisation successfully implements adaptive hazard management, updating hazard information, analyzing potential risks and consequences and possible prevention activities, it may create a safety culture within the organization which is also very essential for TQM implementations. TQM mainly tries to change the organizational culture and makes the changes a way of life including safety culture. The success of managing safety culture would obviously support handling organizational culture as a whole.

2.6. Innovative safety management

Similar to adaptive safety management innovative safety management is also very essential for organizations. Strong commitment and leadership in identifying and implementing comprehensive and integrated change in safety management is required. TQM would never

be successful if the management commitment is not provided. This is the same especially for innovative safety management which requires a safety vision and business strategy that are clearly understood and actively pursued by all managers and employees. That is also the requirements of TQM yielding improvement of technological processes, products and the environmental impact of business operation. To achieve the required level of improvements, organisational structures that create open, two-way communication channels to enable employees to have a greater say in the way they work is essential. This could be done using TQM principles. Having innovative approaches in safety management may create innovative culture in organizations which would definitely increase the success of TQM as it triggers other innovations as well. Safety policies and strategic management may support organizational strategic planning activities which is also the task of TQM.

2.7. Reducing employee errors

OHS mainly concerns in reducing employee errors which could be triggered by the environment and working conditions. Through behaviour based safety management programs, OHS does not treat accidents as performance errors rather it tries to identify basic sources leading to the errors. Employee may not use defective equipments and inappropriate methods. By changing employee behavior, it may be possible to create more realistic tasking removing unnecessary routines. Accidents caused by malfunctions in the perception system or distraction by others are often the result of daydreaming and boredom on the job. Build in change or schedule more frequent breaks and rest periods to reduce boredom and lessen the incidence of accident and injury. TQM would not ask more than this.

Similarly, the OHS may

- Reduce equipment insufficiency
- Empower employees to be responsible for their equipment.
- Establish an ergonomic approach to workplace design.
- Reduce procedure insufficiency
- Establish ergonomic work environments
- Reduce workplace accidents

These will obviously lead to higher quality production and more cost-effective management which is one of the basic TQM principles.

2.8. Risk management

Risk management is taken into account by both TQM and OHS. TQM requires the identification of possible and potential risks with their probability to occur and their possible consequences. By this way it is expected to create possible preventive action to secure organizational operations. This is also the main concern of OHS. OHS practices provide scientific and systematic approaches for risk management. Employing them successfully support the TQM activities and contribute to its success.

3. OTHER FACTORS AFFECTING OHS AND TQM

In addition to above explanations, there are some other factors supporting the successful implementation of OHS and TQM. They may include ethics, integrity (honesty, values, sincerity, moral fairness etc.), trust, training, recognition, communication as well as leadership. These are required characteristics of the people involved in the organizational activities in both managerial and operational levels. OHS management could not be

successful without a firm believes, trust, eticihal approach and could not be spread within the organization without communication and recognition. These should obviously be supported by the leadership. The same applies to TQM. Creating success in these factors may definetely create success in both OHS and TQM.

4. CONCULISON

OHS and TQM two different management approaches which supports each others and there are a lot of similarities in both systems. Integrating these two would definitely increase the productivity and saves some time and costs as it prevents dublicated efforts. Especially, employee participation, continous improvements, risk management and hazard analysis studies as well as total safety management can support TQM activities effectively. This paper explains the role of OHS management activities for creating a successful TQM in organizations. It points out the importance of integrated safety and quality management. The study will continue to provide a general assessment model for integrated safety and quality management in enterprises.

5. REFERENCES

- [1] Boje, David M. & Windsor, Robert D. "The Resurrection of Taylorism: Total Quality Management's Hidden Agenda", *The Journal of Organizational Change Management*, Vol. 6, 1993, p.62.
- [2] EASHW, 2000, OSH and total quality management in Berglandmilch company, Graz, Technical report, http://agency.osha.eu.int/publications/reports/307/en/index_22.htm (available in August 2005)
- [3] EASHW 2002, , The Use of Occupational Safety and Health Management Systems in the Member States of the European Union: Experiences at company level, European Agency for Safety and Health at Work, Belgium
- [4] Krause T.R., and Hidley J.H., Behaviorally based safety management. Paralleles with the quality improvement processess, *Professional Safety*, October issue, pp 20-25
- [5] Kuusisto A., (2000) safety management systems, audit tools and reliability of auditing, Technical Research Center of Finland, VTT publication 428.
- [6] Loushine T. W., Hoonakker P., Carayon P., Smith M. J., and Kapp E. A., Safety and quality management systems in construction: some insight from contractors, <http://cqpi2.engr.wisc.edu/cprc/docs/IJIE2003%20Paper.pdf> (available in August 2005)
- [7] OSHA (1989). Safety and health program management guidelines, *Federal Register*, January 26, 1989, 54(16), 3904-3916
- [8] Rahimi, R. 1995. Merging strategic safety, health and environment into total quality management. *International Journal of Industrial Ergonomics* 16(2) pp. 83-94
- [9] Smith, M. J., Cohen, H.H., Cohen, A., and Cleveland, R.J. (1978). Characteristics of successful safety programs. *Journal of Safety Research* 10(1): 5-15
- [10] Weinstein M.B., 1996, Total quality approach to safety, *Professional Safety*, July issue, 18-22