CHAPTER 3

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TOTAL QUALITY MANAGEMENT

3.1   What is Total Quality Management?

The Total Quality Management approach is the managing for total quality and managing for effectiveness and competitiveness, involving each and every activity and person at all levels of the organisation. This approach often involves the total transformation of the existing management and corporate culture. It leaves no room for half-hearted efforts or complacency. Total Quality Management (TQM) is a culture that requires a total commitment to customer satisfaction through continuous improvement and innovation in all aspects of business (Logothetis, 1992, p.1). In TQM the view is taken that each person or departmental activity within the organisation affects another and is in turn affected by others. As each person or department receives output from another, this makes the said person or department a customer of the other. When customer satisfaction is targeted, it therefore means that the quality focus is not only externally focussed but also turned inwards. TQM supplies a common language and proper communication to the organisation for achieving quality. Achieving customer satisfaction becomes an everyday duty for everyone involved with the creation of the product or service.

In the words of J.L. Hradesky (1995, p.2) TQM is "…a philosophy, a set of tools, and a process whose output yields customer satisfaction and continuous improvement." The major difference of this system to traditional systems is that it requires everyone in the company or organisation to practice it.

The objectives of TQM are continuous improvement and innovation. This process is never-ending as no process is perfect and cannot be improved. In TQM the top managers are the driving force behind the culture change and they must take the responsibility for ensuring the beginning and continuation of this change. They do this by leading the process of defining a new total quality process and creating the ideal conditions for everyone in the organisation to fit into this policy.

The changes required by TQM are not only technical changes but, more importantly, social changes. These social changes which constitutes the abandoning of established habits and attitudes, requires a great deal of faith and commitment from all involved. It must be remembered that a corporate culture takes a long time to evolve and changing it in a relatively short period of time is difficult. The existing culture also reflects the image that the outside world has of the company, and this might not always be something that should be drastically altered, especially if the company enjoys a favourable image.

TQM thus combines cultural-changing tactics with structured technical techniques to satisfy internal customer requirements and this leads to external customer satisfaction. Once effectively implemented, TQM will become integrated into all aspects of the corporate identity (Hradesky, 1995, p.3). TQM takes quality, from a product appraisal function, to a corporate imperative for excellence and a refusal to accept the current situation.

To effect a cultural change, management has to be in touch with behavioural sciences, human motivation and the concepts of the existing culture such as beliefs, attitudes, habits and practises. The cultural change should be a process that offers an alternative to the current culture while not creating a void where a new culture has to be built from scratch.

Total Quality Management creates an environment where employees are proud of their work, where they are part of a team and are respected for their efforts, where fear is eliminated and where everyone strives for the best interests of the company while not abandoning their own.

To achieve this the following three fundamentals need to be established:

1. Commitment to continued quality improvement and innovation.

2. Scientific knowledge of the proper tools and techniques for technical change.

3. Involvement by everyone to effect social change.

These three fundamentals are known as the axioms of the TQM culture and all three are of equal importance. (Logothetis, 1992, p.3). These three are represented by a triangle as shown below.
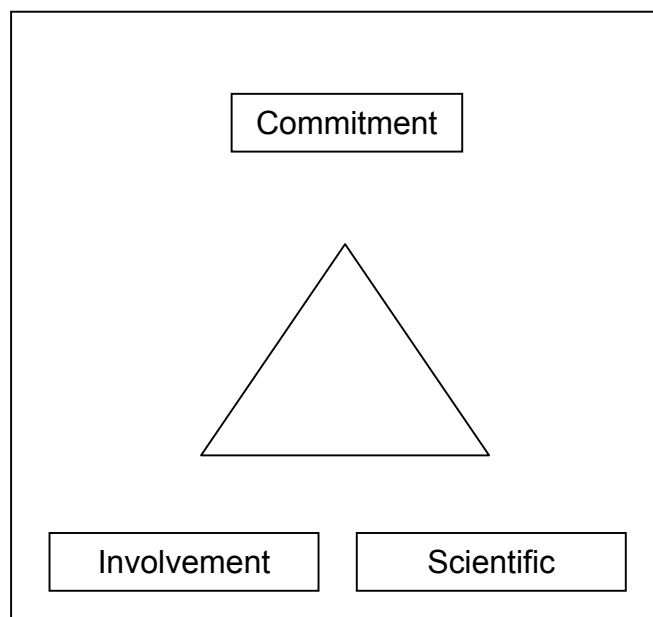
Figure 3

The axioms of TQM culture

These three axioms should be present in any complete statement about quality. In order to establish a TQM culture, all three fundamentals should be realised. According to Logothetis (1992, p.5) Total Quality Management can be defined as follows: "Total quality management is a culture; inherent in this culture is a total commitment to quality and an attitude expressed by everybody's involvement in the process of continuous improvement of products and services, through the use of innovative scientific methods." To further justify this definition, a discussion on the three axioms is required.

3.2   The Total Quality Management Axioms

3.2.1 Commitment

Although management commitment to continuous improvement of quality sounds like an obvious necessity, it is not an easy commitment to adhere to. It often involves a change from the old style of management and a total cultural transformation. Increasing customer expectations require the development of a new, management-led strategy focussing on total quality.

Senior management should plan, initiate and co-ordinate the quality improvement process and keep up the momentum should the enthusiasm die down. This requires training, not only for the workers, but also for

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management. Senior management must further always demonstrate their commitment by active participation in quality improvement projects. This commitment must be demonstrated not only through words and declarations but also through actions like the formation of a quality steering committee.

Slogans and posters quite frequently do not have the desired effect and can in some cases be counter productive. Senior management should rather create the right conditions in which quality can flourish and be maintained. One cannot expect to build a quality building by only using the cheapest materials, regardless of their quality. Unreliable suppliers will put the time aspect of a project under pressure, which might lead to poor quality. Top management must ensure that the system in which the employee works, does not handicap his potential.

For a system to be able to motivate workers, it must include proper working conditions, supply training and education, encourage good communication and co-operation, utilise modern leadership rather than strict supervision, supply good incoming materials, equipment and appropriate quality tools and create job satisfaction. This type of system can only exist when top management lead by example and do not create a scapegoat (like a quality manager), to blame if and when things go wrong.

Top management must create the right environment for quality improvement and start the ball rolling. Middle management however, must ensure that the TQM principles are communicated and spread throughout the organisation. They must also be the link through which the employees' efforts are recognised and rewarded by top management.

Further commitment to education, training and re-training for everyone, from top management to general workers, is required. Training must be done using modern, up-to-date techniques and material. This also requires a willingness by top management to invest in the development of their workforce and its long term survival and growth. No future however, can be possible without the attainment of appropriate scientific knowledge.

3.2.2 Scientific knowledge

Quality improvement tools exist for use by management, technicians and both. These tools have all been tried and tested and have scientific proof that they can work. These tools provide a common quality language throughout the company and helps in the assignment of responsibility. This eliminates the vicious circle of blame, unjust recrimination and apathy. Everyone knows exactly what his part in producing a quality product is. The idea of using these tools is to continuously improve the process that produces the product.

Although the technical tools are tried and tested, there is still the need to co-ordinate their use and to train people in using them optimally. New uses for these tools and further development of them should also take place. The main function of the tools should be to identify when and where bad performance occurs and to suggest and implement corrective actions immediately. This will fix small problems at low cost before they become big problems that incur large costs. Should the process become successful, quality output would become an expected reward rather than a forced obligation. This will lead to job satisfaction which will, in turn, lead to company survival.

Commitment to quality without the backup of scientific tools will soon be rendered useless. The result of matching the scientific tools to the TQM structure will result in the creation of a learning curve, the refinement of the TQM system and the redistribution of knowledge throughout the organisation. This redistribution is especially important in South Africa today and through the construction industry, this distribution can be spread to people outside the organisation through the extensive use of subcontractors. These subcontractors are often from previously disadvantaged communities and their education could be seen as a contribution to the company's social responsibility.

The use of scientific tools creates a common language that can make it easier to communicate the quality requirements to labour. Whereas the lowest paid employee of the company or subcontractor might not understand the overall economic repercussions of poor quality workmanship, he will understand what it causes if poor quality is expressed in terms of "rand to fix" or "time spent on re-work" if he is given some basic education. The system must be extended to include education of all the role players i.e. all subcontractors and their labour, suppliers, etc.

Some technical techniques for implementing TQM include:

- Statistical process controls which aim to reduce variation from customer requirements thus improving customer satisfaction

- Effective problem-solving techniques which solves problems, prevents future problems and create opportunities for improvement.

- Design of experiments that provide for finding causes for significant problems

- Quality function deployment through which customer requirements are determined and translated into design- and process requirements and manufacturing inputs.

- Using proven World-class manufacturing techniques which are easier, cheaper and faster to implement.

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- A quality / productivity improvement process which combines all the various techniques into an effective approach

- ISO 9000 Plus which revolves around the implementation of an international standard quality management system that leans towards having effective procedures and policies rather than documentation only. (Hradesky, 1995, p.3-4):

A common language, coupled with the necessary commitment will help to realise the third axiom, which is involvement.

3.2.3 Involvement

It can be stated that axiom one was concerned with structural aspects while axiom two involved technological aspects. Axiom three, involvement, is concerned with social aspects. No TQM initiative can bring about the required cultural change without properly addressing the social aspects. This is because total quality is not about a particular process or person's responsibility, but rather about everybody in the company embracing a new attitude and creating a new network of relationships. Management commitment will become fruitless unless the workforce is motivated to get involved in the effort.

Monetary rewards or penalties, which are currently being used to motivate people / subcontractors to achieve quality, is only effective as a

short-term motivator. Pride and the achievement of excellence are longer-term motivators, which will usually, also lead to monetary rewards. People should be made to feel part of a team striving for success and sharing failures. They will respond to trust placed in their abilities and will increase their efforts if they believe that their actions have an impact on further activities and that someone is depending on them. Quite often subcontractors are made to feel like outsiders rather than important contributors, a fact that can explain a lot of the poor quality that is currently evident in the construction industry.

If the team is strong enough, occasional failures that will arise, can be absorbed more easily and will be corrected more successfully. The achievement of team spirit requires the absence of fear, of mistrust, of communication barriers, of individualism and of isolation. This can only be achieved if top management changes the system accordingly.

Teamwork inevitably leads to easier identification and resolution of problems as more people take an interest in the entire process. Using the experience of the people nearest to the process will increase efficiency. Their inputs on specific areas become paramount in the continuous improvement of the system as a whole. If this experience and resultant recommendations and adjustments are communicated openly and honestly, the results achieved will far exceed those obtained through a campaign of unsupported slogans and exhortations.

It is up to senior management to champion active participation and involvement through open discussion of problems and recommendations. Adequate time should be allowed for planning and team building and resources allowed for training. Accepting greater responsibilities should be encouraged, within bounds, while continuous monitoring of the improvement process helps to maintain the momentum.

Creating cultural change can be achieved through some of the following techniques (Hradesky p.3-4):

- Implementation of values that will produce the behaviours that achieve the company mission and vision.

- Producing questionnaires that measure the effect of cultural change.

- Creating cultural-fostering groups that monitors the effectiveness of the cultural change efforts and recommend how and when adjustments to the implementation process should be made.

- Ensuring effective communication that serves as the basis for interchange of information and in relationships

- Empowering the workforce to enable everyone to participate in making the vision a reality.

- Making the workforce take responsibility for the processes, the flip side of empowerment

The requirements needed to get everyone involved, sounds like an awesome task but is one that can be achieved if management is committed to the process of TQM, which brings us back to axiom number one.

3.3   The objectives of Total Quality Management

Various strategies are used to achieve quality improvement through TQM. The strategies most commonly used can be divided into Primary and Secondary strategies. Some of these strategies can be used on their own, but more than one is generally found to be in use.

3.3.1   Primary strategies

These are long term strategies and include:

- Benchmarking all major operations to ensure that it is done as effectively and efficiently as possible
- Obtaining suggestions on improvement from employees
- Team identification and development to identify and solve problems
- Team development to encourage participative leadership
- Process management tools to reduce cycle times and improve customer service
- Developing and training staff to find ways to improve customer service

- Implementing improvements in order to qualify for ISO 9000 registration

3.3.2 Secondary strategies

Secondary strategies are focussed on operations and profitability and include:

- Continuous contact with customers to understand and anticipate their needs

- Developing customer loyalty through exceeding their expectations

- Working with suppliers to improve their product or service quality

- Using information and communication technology to improve customer service

- Developing focussed units within the organisation to improve performance

- Using concurrent and simultaneous engineering

- Encouraging, developing and supporting employee training and development

- Minimising all production cycle times

- Focusing on quality, productivity and profitability

- Focusing on timeliness and flexibility

  (Kerzner, 2001, p.1134)

3.3.3 The focus areas

The implementation of the various primary and secondary strategies is achieved through focus areas. There are basically three focus areas in a TQM system. These are Management focus areas, Tool focus areas and Employee focus areas.

3.3.3.1   Management focus areas

Management focus areas are items that the management of the company decide on and give attention to. They include:

- Customer focus

- Benchmarking

- Re-engineering

- Cycle time reduction

- Time-based competition

- Just-in-time (JIT) operations

- Adaptability

- Concurrent engineering

- Activity-based costing

- Supplier co-operation and development

- Product Innovation

(Kerzner, 2001, p.1135)

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3.3.3.2   Tool focus areas

This involves ascertaining which tools would suit the company best and how they may be adapted to the specific requirements of the company. The tools are:

- Brainstorming

- Pareto Analysis

- Cause and Effect Diagrams

- Statistical Control Charting

- Quality Function Deployment

- Process Quality

- ISO 9000

(Kerzner, 2001, p.1135)

3.3.3.3   Employee focus areas

These areas revolve around the employees of the organisation and what they need in order for the TQM process to be successful. These include:

- Employee Motivation

- Group Dynamics

- Team Problem Solving

- Teamwork

- Employee Education and Training

    (Kerzner, 2001, p.1135)

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3.4   The result of Total Quality Management

The results of an effective TQM system include error-free processes that produce products or services that are fit for use, produced at the right time and at the right cost (Hradesky, 1995, p.3). It further ensures that customers are retained, increasing profits and generating new business. TQM will ensure that employees take pride in their work, contributing towards job satisfaction.

3.5   Conclusion

In the harsh reality of the current economic situation, both in South Africa and the world, TQM supplies a means to improve a company's image, profitability and employee satisfaction, leading to higher competitiveness and an increased ability to survive and adapt.

With this understanding of Total Quality Management, it becomes necessary to investigate the requirements for and processes involved in the implementation of a Total Quality Management system. This will be the focus of chapter 4.