

Total Quality Management

(Relevant to PBE Paper II – Management Accounting and Finance)

Dr Fong Chun Cheong, Steve, School of Business, Macao Polytechnic Institute

Introduction

The principal emphasis of modern business with its products and services is quality. Quality is all-embracing, including not only outputs, but also inputs as materials, labour and supporting work. The total quality management (TQM) approach is summarized as gradually enhancing the product and/or service quality. The focus is to “get things right first time, all of the time”. In the long run, the cost of this approach will be less than rectifying quality failures after they have been found.

TQM works on the foundation that the product and/or service quality is the requirement for products manufactured or services offered. It reflects that TQM relies on the inputs of management, workers, suppliers, and even customers, so as to match these with customer requirements.

In TQM, all manufacturing and business transactions are involved in a continuous process of quality enhancement. Nowadays, TQM has extended from the statistical monitoring of manufacturing processes to customer-oriented processes of service improvement. It emphasizes providing high-quality products or services consistently. In the 1980s, many western companies regarded quality to be an additional production cost; later they discovered that quality could lead to expenditure reduction. Traditional manufacture focuses on production volume over quality and results in high levels of stocks at each manufacturing process. It does not address to the problems of shortages owing to poor work quality and excessive expenditure on inspection, scrap identification, rework and repairs. Companies discovered that it was cost effective to produce the products right the first time rather than wasting resources by manufacturing substandard products that subsequently need to be returned by customers.

The TQM's implications for management accounting hence involve considering:

1. Staff training;
2. Product/service design;
3. Use of appropriate information system.

The core concern is to correctly control costs of quality.

Cost of quality

Cost of quality is the total cost of quality-related efforts and drawbacks for product or service improvement. Before the introduction of TQM, the general idea was that expenditure contributed to quality either by purchasing better materials or machines or by using more workers. Moreover, while management accounting had evolved to classify financial transactions into revenues, expenses and changes in shareholder equity; it does not allocate costs in relation to quality. It has to be reconsidered as managers rely on other production workers to produce the products with their own hands. After classifying quality-related entries from a company's accounting records, managers can evaluate investments in quality based on cost reduction and profit increase.

The core theme of quality enhancement is that more investment in prevention leads to more savings in appraisal costs and quality-related failures. This allows the company to practice self verification. When there are increasing numbers of defects, companies usually react by allocating more people to inspection roles. However, inspection is not completely effective and appraisal costs may be high as long as the failure costs are high. The only problem solving method is to exercise the "correct" amount of prevention.

Once classified, the cost of quality can work as a means to plan, measure, analyze, and estimate production costs. Companies are usually not aware of how much they spend on quality. Managers need to be aware of the costs of quality and how costs change over time. They work out cost of quality report which records four types of quality costs:

1. Prevention costs – Resources are spent to avoid producing products/services of inferior quality that do not match the required specification. They include the costs of quality planning, design, training and the extra costs of buying higher quality raw materials.
2. Appraisal costs – Resources are spent to make materials and products to meet quality requirements. They are the costs of inspection of inputs and outputs.
3. Internal failure costs – Costs occur when outputs do not meet quality standards. They are the costs incurred before the product is distributed to the customer, such as the cost of scraping, reworking and downtime owing to defects.
4. External failure costs – Costs occur when products or services do not meet the requirements or satisfy customer needs after distribution. They are the costs of dealing with customer complaints, repairs, product replacement, or customer returns, and costs arising from damaged company reputation. They also include the opportunity loss of contribution from lost sales owing to poor quality. Costs can lead to critical impact on future sales. The amount of compensation to outside and the opportunity loss of future sales may be huge.

The cost of quality report is used to direct the company's top management's attention to be aware of quality-related costs. The report directs attention to the chance of

reducing costs of quality by a proper allocation of costs among the four quality cost types. For instance, by spending more on prevention costs, the amounts used for internal and external failure costs should be lower and hence total expenditure should be reduced. By designing products and processes with high quality, appraisal costs decrease as less inspection is required.

Prevention and appraisal costs are the costs of quality conformance. They help to eliminate the costs of failure. Internal and external failure costs are the costs of non-conformance. Companies should allocate resources in prevention, appraisal and internal failure cost categories. Though the amount may be large, it is better than using huge amount of money for external failure costs. The potential loss of product image and sales market, and the product or service compensation involved may be larger than the costs of in prevention, appraisal and internal failure added together.

Kaizen management

Kaizen management aids TQM. Kaizen is a Japanese term for "work improvement" which focuses on continuous process improvement in engineering, production and business management. It was first introduced into Japanese business after World War II. It has been widely adopted in banking, healthcare and other industries. When it is employed in the manufacturing industry and utilized in the workplace, Kaizen refers to the activities that gradually upgrade all work processes, and involves all staff from the chief executive to the assembly line workers. By implementing standardized activities and processes, Kaizen can eliminate waste.

Kaizen is a regular work practice; its purpose goes beyond simple productivity improvement. It helps to humanize the workplace, eliminate overly hard work, and teach people how to perform experiments on their work using the scientific method and how to identify and reduce waste in business processes. The process recommends a humanized approach to workers and to improved productivity. It helps to nurture the company's human resources as the setting is to encourage and praise participation in kaizen activities. Appropriate implementation needs the participation of workers for improvement. All levels of staff work in Kaizen, from the chief executive to junior office staff and production workers.

There are five main elements of Kaizen are:

1. Teamwork
Working together in a team cohesively and productively is important in a modern manufacturing or service industry.
2. Personal discipline
Completion of work effectively and efficiently can only be achieved when workers follow guidelines or discipline to work.
3. Improved work morale
Work motivation is essential as the challenge may be huge and may not have been faced before.

4. Quality circles

This is an internal group for conducting specific tasks in a workshop environment. Front-line staff are invited to express opinions on daily work operations. The quality circles not only concern quality issues, but also address issues of cost, safety, and productivity.

5. Suggestion for improvement

This suggestion system works as an integral part of Kaizen and focuses on the morale-improving benefits of contributive participation.

Kaizen focuses on continuous improvement. Each Kaizen system complements the other systems together to provide a total system of quality improvement. All of the systems are set to improve competitive advantage and finally to increase company profitability.

Honda case study with Kaizen

At Honda motorcycle manufacture, a small group section usually deals with the line work situation and productivity. This group is usually led through the Kaizen process by a line supervisor. Kaizen generates TQM, and sets free human efforts through enhancing productivity by using information technology and machines.

Kaizen at Honda delivers small and gradual improvements, the culture of gradual aligned standardization and a little bit improvement yields significant results in compounding productivity improvement. This includes manufacturing process changes and work monitoring. Large-scale project scheduling and extensive manufacturing process are replaced by small work changes, which can be quickly adapted as new improvements.

The Honda production system is known for Kaizen, where all line workers are expected to stop their production line in cases of any abnormal work. Along with their supervisor, operators suggest an improvement to resolve the abnormal outcome problems.

Further features of TQM

The key to TQM is for the company to have well-defined clients to work for. Thus the packaging line workers are the clients of the assembly line workers who are in turn be the clients of the manufacturing line workers. Areas of responsibility need to be properly identified. A supervisor is allocated to each unit, and then the operation client chain is established.

Conclusion

To meet TQM requirements, a company needs to employ more staff and may need to change its service levels for clients, which includes internal clients. This may involve costs for redesigning systems, recruiting and training staff, and purchasing of appropriate equipment. Productivity and workplace improvement are enhanced through TQM and the related costs of quality concern and Kaizen management.

References:

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