



An Assessment of Automated Quality Management in an Organization

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ABSTRACT:- The external customer is very important to any organization because the organization thrives on what and how much it can sell to the customer. It is therefore expedient that the customer to be the focal point of the organization as far as producing quality products and services are concerned. In the manufacturing industry, the quality of products offered to the customer is what determines the amount of patronage an organization gets from its customers. Quality management which can be defined as a structural system for meeting and exceeding customer needs and expectations by creating organization wide participation in the planning and implementation of continuous quality process, QM is one way that organizations can ensure that the customer gets the quality products he/she desires.

I. INTRODUCTION

In industries, even in government and public agencies, the watchword these days is quality often heard as total quality or Quality Management (QM). Over the past decades many organizations have recognized the importance of developing a Quality Management (QM) orientation. Oakland (1989) argues that Quality Management needs to gain ground rapidly and become a way of life in many organizations and for these to be achieved time is needed in order to integrate the appropriate quality principles and techniques into the culture of the organizations. Human resources are equally important for Quality Management success therefore it could be said that people's awareness of quality is central to Quality Management's purpose.

In today's world of increasing business competition, the long term survival of any organization depends on its continuous ability to satisfy customer needs and expectation in respect to the quality of goods and services provided. Rarely would a rational buyer embark on a repeat purchase of a product or service they perceive as low quality. Concern for high product or service quality is not restricted to the companies alone. Consumer groups have been vocal in the demand for better quality. Government has also formed the crusade for better products and service quality. In Nigeria and many countries, product and service standard organizations have been set up to monitor the quality of goods and services that are been provided.

Quality management as a working philosophy is just like a breath of fresh air in the respiratory working process of an organization, and today most companies around the globe have Quality Management programs that integrate every department in their respective organizations to gain competitive edge. Quality has become the watchword of today's companies (Johnson and Chvala, 1997). Based on the above discussion, this research thesis seeks to validate Quality Management as an important tool which is the brain behind the success of Unilever Nig. Plc. Gone are the days when consumers were not bothered about the quality of products and services they bought. There is an increasing quality consciousness in today's business world because consumers need an improved and standard quality of products and services that will satisfy their needs since they are faced with variety of products and services to choose from.

II. MEANING OF QUANTITY MANAGEMENT (TQM)

The term "Quality Management" means different things to different people. QM is both a philosophy and methodology for managing organizations.

TQM provides the overall concept that fosters continuous improvement in an organization. The QM philosophy stresses a systematic, integrated, consistent, organization-wide perspective involving everyone and everything. It focuses primarily on total satisfaction for both internal and external customers within a management environment that seeks continuous improvement of all systems and processes. It is a long term continuous improvement in product quality covering such areas as cost reduction, reduction in product defect and reduction in production and distribution circle time. It is about increasing workers' employment that is,

giving every worker adequate training and requisite authority to deal with problems as they arise even if those problems not primarily within their decision making jurisdiction.

Jones, George, and Hill (2000) have seen QM as "a management technique that focuses on improving the quality of an organization's products and Services." Conceived as an organization' wide programme, QM requires the cooperation of managers in every function of an organization if it is to succeed. It involves all members of the organization in controlling and continually improving how work is done.

Lewis, Goodman, and Fandt (2002) have said that QM "focuses on managing the entire organization in a manner that allows it to excel in the delivery of a product or service that meets customers' needs".

Nickels, McHugh, and McHugh (1999) see QM as "the practice of striving for customer satisfaction by ensuring quality from all departments in an organization

Stoner, Freeman, and Gilbert (1999) see QM as "an organizational cultural commitment to satisfying customers through the use of an integrated system of tools, techniques, and training". QM involves the continuous improvement of organizational process, resulting in high-quality products and services.

QM is the totally integrated effort in gaining competitive advantage by continuously improving every facet of an organization's activities Samuel (1995) defines QM by looking at each word as:

"Total - Everyone associated with the company is involved in continuous improvement (including its customers and suppliers if feasible).

Quality - Customers' expressed and implied requirements are met fully.

Management - Executives are fully involved"

According to Kreitner, QM involves "creating an organization culture committed to continuous improvement of skills, team work, processes, product, service quality, and customer satisfaction. It is an approach to improvement which has established itself because there is a notion in people's mind that the status quo is not sufficient (Scur, 1999). According to MacDonald (1995), "QM is a change agent which is aimed at improving customer driven organizations". From the above definitions, the QM philosophy stresses systematic, integrated and organizational way of life directed at the continuous improvement of an organization. It involves all the people in the decision making process in such a way that management personnel becomes responsible for managing change and not for deciding everything.

Some other scholars have defined QM as a management strategy for managing quality; it is viewed as a means for attaining an end. According to the International Organization for Standardization (ISO) "QM is a management approach for organization centered on quality, based on the participation of all its members aiming at long-term success through customer satisfaction as well as benefit to all members of the organization and to the society, ISO 8402, (1994). It is the practice of striving for maximum internal and external customer satisfaction by developing and providing them with high quality, high values, wants satisfying goods and services as well as ideas (Nickels et al, 1999). It is a technique that focuses on improving the quality of an organizations product and services (Jones et al, 2000)

Dean and Bowen (1994) review of QM literature suggests that its key principles are customer focus, continuous improvement and team work. Each of this principle is then implemented through a series of practices, such as collecting customer's information and analyzing processes, supported by the use of specific quality management techniques such as team building and analysis. According to Oakland (1993), quality is simply meeting the customer requirements. This is expressed in many ways by other authors such as Deming (1982) who says that quality should be aimed at the needs of the customer, present and future. Freigenbaum (1991) defines quality as the total composite product and services characteristics of marketing, engineering, manufacture and maintenance through which the product and services in use will meet the expectations of the customer.

However, Hill (1991) claimed that the proponents of QM have understood the difficulties in getting staff at all levels in the organization to buy into the idea of QM, and that they focus on too narrow a range of change levels. Traditionally working practices and management styles may be inconsistent with QM and resistance to the ideas of QM, may be encountered only at shop floor level where it may cut across traditional working and industrial relation practices but amongst professional, supervisory and management staff. QM is an operations management system that creates structures within an organization that ensures satisfaction at every stage from internal and external customers as well as suppliers. It creates quality through continuous improvement development of system and products by creating an organizational culture of quality. QM combined with effective leadership results in an organization doing right thing right, first time.

Quality management (QM) is a senior management-led company-wide initiative, intended to improve effectiveness and to build quality into the service delivered. Involvement of the whole work force and a

commitment to doing the right things correctly are emphasized. The principles apply equally to manufacturing industry and service industry. These definitions entail that total quality management (QM) means:

- Intense focus on the customer: Meeting the customers' requirements by satisfying their stated (expressed) and implied needs.
- Concern for continual improvement: QM is committed to never being satisfied. "Very good is not good enough". Quality can always be improved.
- Improvement in the quality of every thing the organization does: QM uses a very broad definition of quality. It relates not only to the final product but how the organization handles deliveries, how rapidly it responds to complaints, how politely the phones are answered, and the like.
- Accurate measurement: QM uses statistical techniques to measure every critical variable in the organization's operations. These are compared against standards or benchmarks to identify problems, trace them to their roots, and eliminate their causes.
- Empowerment of employees: QM involves the people on the line in the improvement process. Teams are widely used in QM programs as empowerment vehicles for finding and solving problems. Empowerment means increasing the decision-making discretion of workers.

III. REVIEW OF RELATED WORK

ORIGIN OF TOTAL QUALITY MANAGEMENT

The American Walter A Stewart of Bell Laboratories developed a system of measuring variance in production systems is known as statistical process control (SPC). SPC is one of the major tools that QM uses to monitor consistency, as well as to – diagnose problems in work processes. His student W. Edwards Deming, a mathematical physicist and U.S. Department of Agriculture and Census Bureau research scientist, was hired to teach SPC and quality Control to the U.S. Defense industry. These methods were considered so important that they were classified as military secrets known as Z1. After World War II, U.S occupation forces in conjunction with the Japanese Union of Scientists and Engineers (JUSE) invited W. Edwards Deming to lecture throughout Japan on SPC and quality control methodology. Although these teachings were valuable, they were not accepted at face value. The Japanese were quick to adapt and modify Deming's techniques to suit their social background and other circumstances. Even today, the highest award in Japan for quality is named after W. Edwards Deming. Deming received one of Japan's highest awards, the Emperor's medal for his contribution to the economic reconstruction of Japan.

Other Americans, for example, Joseph M. Juran also stressed to the Japanese the importance of involving all departments in the pursuit of quality and the importance of customer satisfaction, rather than simple adherence to technical specifications. Kaoru Ishikawa enlarged the ideas of Juran and Feigenbaum to include as customers, internal customers, those in an organization who depend upon the work output of others. QM today, as practiced in Japan, the U.S. and Europe, is a holistic management philosophy that has evolved over time, and not simply a set of specific techniques like SPC, quality circles, and continuous improvement procedures. QM if implemented correctly is a fundamental organizational change.

www.dti.gov.uk/quality/evolution

IV. BASIC PRINCIPLES OF TQM

Quality management is based on certain principles. These principles appear in different forms. Dean and Brown (1994) identified three (3) main principles.

1. Customer Focus: This is the most important principle of QM. QM is a customer driven management technique with cardinal objective of ensuring the total customer satisfaction. The goal of satisfying the customer is expressed by the organization in its attempt to design and deliver product and services that meets the customer requirement. Practices in organizations which exemplify customer focus includes; availability of the product, delivery of the product, reliability of their product, and cost effectiveness and improved internal operations. From the point of view of QM, organization serves two categories of customers, the external customer and the internal customer. The former is the end user of the product while the employee inside the organization who uses the end product or service of another employee as an input for his own work is the internal customer. E.g. manufacturing can be considered the customer of engineering.

QM focuses on improving both the internal and external customer. The rationale behind this is that, it allows the company to work with its beneficiaries in the best conditions which translates into a relationship of trust and gains that have both financial (increased profits, high retention rates, increased market share) as well as personal clarification of roles employee motivation, productivity in terms of quality and quality in nature.

2. Continuous Improvement: QM is directed at the continuous improvement of the organization. This means a commitment to a continual search for new and better ways of doing things in the organization. It involves planning and operating processes, providing input, evaluating output, examining performances and

modifying processes in order to achieve better performances. The continuous improvement process includes a series of corrective and preventive actions.

Through the continuous improvement process greater customer satisfaction is attained, its adoption recognizes that quality is a moving target; as a product believed to be reliable today could be of average standard next month. The QM culture is regardless of how good the present performance is, it can be improved so long as the customer's expectation will continue to rise. QM emphasizes the dynamism of the organization in order to meet dynamic customer needs.

3. Teamwork: Customer focus and continuous improvement can best be achieved by collaboration throughout the organization as well as with customers and suppliers. It involves collaboration between managers and non - managers as well as between functions. The theory of synergy points to the fact that there is increase in output/achievement when two or more factors/sub units are combined that the total of what individuals or sub—units would have achieved independently. This is the underlying factor of teamwork. According to Scurf (1991), working as a team brings benefit that individuals cannot necessarily achieve and maximizes the use of skill resulting in better decisions.

Teamwork is based on the notion that the organization as a system cannot be effective if sub — units emphasize their own outcome over those of others. Teamwork practice includes identifying the needs of all groups and organizations involved in decision making, trying to find solutions that will benefits everyone and sharing responsibilities and credits. Clampa (1991) cited in Dean and Bowen (1994).

These three (3) principles relate to one another they form the bedrock of total quality management. Teamwork result in continuous improvement which is undertaken to achieve customer satisfaction and is most effective when driven by customer needs.

V. METHODOLOGY

SEVEN BASIC TOOLS OF QUALITY

According to Kenneth J. Kiser and Marshall Shaskin, the seven basic tools of quality is a designation given to a fixed set of graphical techniques identified as being most helped in trouble shooting issues related to quality. They are called basic because they are suitable for people with little formal training in statistics and can be used to solve the vast majority of quality - related issues. The tools are

- Control Charts
- Pareto Charts
- Fishbone Diagrams
- Flow Charts
- Scatter Diagrams
- Histogram
- Check Sheet

Control Charts: These charts display the result of statistical process control measures. They show whether produce samples conform to specified limits or tolerances. It gives a clear usual display that quickly tells when a process is "out of control" when random sampling fields measurement above the upper control unit or below, this triggers a search for the cause of the problem. The production process can then be corrected and brought back "unto control"

Pareto Charts: This is an even simpler tool, used to chart the number of defects or problems of various types in a product over time. A Pareto chart can help identify the relatively few categories of causes that account for most problems. The chart can also be useful for identifying points in the production process at which defeats of certain types are most likely to occur.

Fishbone Diagrams: These are also called "cause and effect diagrams" or Ishikawa diagrams. The chart looks somewhat like a fishbone with the problem or defect the — "effect" — defined at the "head". On the bones growing out of the spine one lists possible causes of production problems, in order of possible occurrence. The chart shows how possible causes occur with respect to one another, overtime, helping start the problem solving process.

Flow Charts: Sometimes called input — output charts give a visual description of the specific steps in a work activity. This is helpful for understanding exactly how things are being done and then determining how a process might be improved. The procedure can be applied to the entire organization to usually track and chart the way the organization operates. Using certain standard symbols to refer to certain types of activities.

Scatter Diagrams: These diagrams provide a standard way of showing how one variable, relates to another in a type of mathematical diagram using Cartesian coordinates to display values for two variables for a set of data one of the most powerful aspect of a scatter diagram however is its ability to show nonlinear relationship between variables.

Histograms: It is also known as a "bar chart". On this chart, the number of products in each U control category" is represented by the length of a bar. Each category is labeled and the bars are placed next to one another horizontally or vertically. This shows which categories account for most of the measured values as well as the comparative size of each category. Histograms give a picture of the actual distribution of measures.

Check Sheet: This is a simple document that is used for collecting data in real time and at the location where the data is generated. A defining characteristic of a check sheet is that data is recorded by making marks ("checks") on it. A typical check sheet is divided into regions and marks made in different regions and have different significance.

BENEFITS OF ADOPTING TQM IN ORGANIZATIONS

Short term and long term benefits are present in any management style. QM has few short benefits and most of its benefits are long term in nature and come into effect only after it is running smoothly. In large organizations it may take several years before long-term benefits are realized. The benefits expected from adopting QM are higher productivity, increased morals, reduced costs and greater customer commitment. These benefits may lead to improvement of an organization's public image. Secondly from the financial performance perspective, careful design and implementation of consistent and documented quality management systems can contribute significantly to superior financial performance (Corbet et al, 2005). Lemark and Reed (1997) also claims that QM leads to an improved profit margin after studying sixty (60) companies that had demonstrated a commitment to QM for at least five (5) years. Eliminating errors and doing things right the first time saves time and resources. The saved time may then be used for expansion of services or machine available to employees in their efforts to increase service quality (Simon and Schuster, 1990).

Furthermore a firm with an effective QM implementation can significantly outperform on the stock price performance (Handicts and Singhad, 2001). According to Anderson et al (1994) and Eklof et al (1999), research has shown that one goal of QM which is customer satisfaction has a significant positive impact on the market value as well as accounting returns. Instead of mistakes being hidden from management or denied and this being allowed to blossom into larger and less easily rectified problems, they are tolerated and employees are encouraged to try again. Hence employers should note that when employees feel they are an integral part of the organization, they feel needed, motivated and enjoy work more which further increases service quality and boost productivity (Proceedings of the international multi-conference of Engineers and Computer Scientist (2009). QM's extensive use of team work gives employees the experience of problem solving. Finally the adoption of QM in organizations has also helped in reducing failure rate as well as less waste.

VI. CONCLUSION

The conclusion that can be derived from this study includes the idea that QM is an instrument that can be used to transform a stagnant organization into a progressive one. In addition the study showed that there is a huge impact on the improvement in quality of products through QM. It was also drawn that there will also be greater commitment as long as the manager and staff are committed to the principles of QM. This study also suggests that QM is responsible for improvement in quality of products and hence customer satisfaction. This may be the case but there exist other management techniques like the six-sigma.

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