

QUALITY MANAGEMENT TECHNIQUES

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ABSTRACT

The level of prosperity and well-being of individuals and society in general depends on Research and Innovation. Internationalization of business and innovation is the result of globalization. Companies must maintain an appropriate breadth of technological competencies in order to stay competitive. Services to customers with greater value, quality, predictability and meeting stake holders' expectations depend on R & D investments. The purpose of this paper is to contribute to the understanding that quality is key in innovation. It ensures that organization products and services are consistent and to achieve the quality assurance and control; processes must be in place. Quality improvement has various methods which cover product improvement, process improvement and people based improvement. It provides competitive advantage. Benchmarking as a tool in new product development helps in evaluating the new product against that of the industry leader. Business re-engineering which is a formal practice in operation research helps the organization take a radical and revolutionary look at the way it operate and the way work is done. The step by step improvement (Kaizen) of all the employees is important so that they perform their work better, tracking progress against organizational goals, identifying applications for improvement in order to assess and evaluate performance accurately. Appropriate measurement therefore must be designed, developed and maintained by people who own the process concerned. Through desk research, the seminar paper employs non experimental research design and evaluative techniques of analysis.

Key Words: *standards, controls, process, methods, improvement*

Introduction

Quality has different meanings to different people. Responses such as the best money can buy, meeting of specification or conformance to specification, the degree of excellence that an item possesses, the absence of defects and undesirable characteristics in a product. These responses of course depend on people's perception of the value of a product or service under consideration and their expectation of performance, durability, reliability etc of the product or service.

Quality can also mean meeting or exceeding customer expectations, both in product quality and quality of customer service all the times. The key issue here is to know accurately customer expectation on a continuing basis. According to Mehta and Pradip, (2008) the expectation of quality and the ability to distinguish various quality characteristics also vary from one group of

customers to another. Generally, the more educated and sophisticated the customer the more the specific are the expectations of quality and more precise the ability of the customer to explore those expectations. Garvin (1988) proposed that definition of quality can be product based, user based, manufacturing based, or value based. A product based definition of quality views quality as a precise and measurable value. A user based definition of quality simply means that quality is whatever the customer says or wants which goes back to meeting or exceeding customers' requirements and expectations. Manufacturing based definition of quality means meeting specifications at conformance to requirements. Any deviation from meeting requirements means poor quality. A value based definition of quality takes into consideration cost or price of a product or service.

Total Quality Management

Total quality management approaches to the direction, policies and strategies of the business or organization. Organizations compete on their reputation for quality, reliability, price and delivery. For any organization, there are several aspects of reputation which are important. It is built upon the competitive elements of quality, reliability, delivery and price of which quality has become strategically the most important. Once an organization acquires poor reputation for quality, it takes a very long time to change it.

According to Oakland (2011), Quality has to be managed, it must involve everyone in the process and be applied throughout in the organization failure to meet the requirements in any part of a quality chain has a way of multiplying and failure in one part of the system creates problems elsewhere leading yet more failures, more problems and so on. Total quality management aims to ensure that all activities within an organization happen in the way they have been planned in order to meet defined needs of customers. Quality ensures the organization product/service is constant. To achieve this, a constant quality assurance and control process must be in place.

Quality Management Techniques

Quality chains can be treated right through the business or service processes used by an organization. A process is a transformation of set of inputs into outputs that satisfy the customer needs and expectations in the form of products, information or service. Quality provides competitive advantage, meeting or exceeding customer expectations. Managers are under pressure to produce the desired result. The key to every employee in an organization from top to bottom must develop a commitment to continuous improvement as an integrated part of their daily work. Quality improvement includes benchmarking, business process re-engineering, six sigma approach, suppliers' development and people management.

Benchmarking

Product, service and process improvement can take place only in relation to established standards with improvements than being incorporated into new standards. It is a reference or measurements standard against which to measure present performance. It is the process of measuring an organization performance on key customer requirements against the best industry. Benchmarking is a continuous process of measuring products, service and processes against those of industry leaders or the toughest competitors (Oakland, 2000).

Benchmarking measures an organizations products, service as process to establish target, priorities and improvements leading to competitive advantage and loss of reductions. It involves analysis of the best products and services available in a particular market place. It helps in evaluating the new product against that of the industry leader. Benchmarking is about comparing performance of critical processes against those of leading performers to identify how they achieve their results. For benchmarking to succeed, management must demonstrate its strategic commitment to continuous improvement, must also motivate employees through adequate reward and recognition systems that promotes learning and innovation adaptation.

Business process re-engineering (BPR)

Business process re-engineering refers to a way of managing change that requires a complete overhaul of business practices and can be implemented through technological changes (Palmer et al., 2009). Hammer (1990) defines re-engineering as using the power of information technology to radically redesign business processes to achieve dramatic improvements in performance. A process on the other hand is defined as a set of activities that taken together produces a result of value to customer (Hammer and Champy, 1993). According to Davenport and Short (1990) a business is a set of logically related tasks performed to achieve a defined business outcomes. BPR and TQM programs are complementary under the umbrella of process management. BPR is a means of changing work processes with customer requirements in a dynamic, flexible way in order to achieve long taken corporate objectives. Secrets of redesigning a process successfully lie in thinking about how to reshape it for the future and require involvement of customers and suppliers. Managers are challenged by BPR to rethink their traditional methods of doing work and to commit to customer –focused processes.

Hammer and Champy (1993) define BPR as fundamental rethinking and radical redesigned of business process to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality, service and speed. The definition emphasized the following key issues. Fundamental rethinking is a clear call for organization to examine itself at the most basic level that is why they do what they do, why they do the job that way, if the processes add value to the product or service, if technology can be used to achieve productivity goals. These questions help the organization to focus on its objectives, which is redefining the goals without which improvement effort will fail however radical it may be. Redesign means not moving superficial changes with what is already in place but discarding the old. It implies not working

from established processes or procedure but redesigning the organization from the scratch. Everything in the organization is fundamentally re appraised.

Dramatic improvement implies that BPR does not seek to achieve marginal or incremental improvements in performance i.e. the normal 5-10 percent improvement rather than focus on improvement of 30-50 percent. Beckford (2002) argues that within certain processes up to 70 percent improvement are achievable. Organizations have embraced a radical overhaul of their processes due to increasing customer demands for quality product and services, frequent changes in information and technology, the increased intensity of competition for market share, the opening up of global market and labour sources and the need to cope with continuous change.

The process of implementing BPR

According to Hammer and Champy (1993) the implementation of BPR programs requires number of stages. One, the organization must have a clear understanding as to why re engineering is needed. Secondly, obtain the business unit (BU) leaders' commitment without it, implementation cannot proceed further. Business unit leaders must grasp the business vision and refine it by challenging the assumptions and principles on which the business is currently run. Thirdly, the organization to identify the processes needs to be re designed. Two approaches can be used, an exhaustive approach which attempts to identify all processes within the organization and prioritize them according to urgency or importance criteria and secondly the high impact approach which attempts to identify only those most in conflict.

Fourthly, it is vital to measure how well the identified processes perform and their current contribution to the entire process. Fifthly, the management starts to design new process with the help of available information technology. Six, top management must specify the technical and social solution needed to implement the new processes. The management should plan for the new technology standards, staffing and education and assess the training needs. Seven, the management should start implementing their plans upon planning for resources necessary to transform existing processes. Hammer and Champy (1993) advocate almost dictatorial style of management in the initial state of BPR implementation. Management can involve and empower their employee after the new process is in place. Lastly, involves continuous redesign and improvement. Continuous improvement does not require fundamental shifts but gradual incremental changes brought about constantly in order to keep the process under control. Once a process has been redesigned, continuous improvement of the new process should become the norm and thus can be achieved by a team of people working in the process and charged with the responsibility of understanding the task of continuous improvement.

Six Sigma

The six sigma is a revolutionary business process which originated at Motorola in 1980s. it is based on the simple premise that organizations of all kinds exist mainly to serve the needs of the customers of their products or services, good quality management has assumed greater

importance. Competitive pressure on companies and government demands on the public sector have driven the need to fund more effective and efficient approaches to managing business or non profit –making organizations. The six sigma process aims at reducing organizational inefficiencies and achieves defects free processes and products. It is a smarter way to manage, put customers' first and use facts and data to drive better solutions. There are five fundamental phases or stages in applying the six-sigma approach to improving performance in a process; Define, Measure, Analyze, Improve and control (DMAIC) thus forms an improvement cycle grounded on Deming's original Plan, Do, Check, Act (PDCA).

In the six sigma approaches DMAIC provides a break through strategy and disciplined methods of using rigorous data gathering and statistically based analysis to identify sources of errors and ways of eliminating them. These revolve around the three major strategies for processes to bring about rapid bottom line achievements design/redesign management and improvement. Six sigma organizations focus on understanding the customer's requirements, identify, and focusing on core critical process that add value to customers, during continuous improvement by involving all employees, being very responsive to change, basing managing on financial data and appropriate matrix and obtaining outstanding results, both internally and externally (Oakland, 2003). Six sigma can be understood by defining it as a statistical measure of the performance of a process or a product, a goal that reaches near perfection for performance improvement, a system of management to achieve lasting business leadership and a world –class performance.

Supplier Development

The quality of purchased supplies is crucial to an organization products & services and consequently to its success in the market place, the quality of material inputs to a transformation process is strong deterrents of the quality of output. Therefore as outsourcing of both products and services in the business area increases, the quality of bought- in products and services becomes critical to the competitiveness & performance of the organization. Supplier development involves a commitment by a company to set and attain internal quality standards which meet requirements of its customers to support its suppliers in enabling, them to meet those same requirements. According to Lysons and Farrington (2012) supplier development is any activity that a buyer undertakes to improve a supplier's performance and capabilities to meet the buyers short and long term needs.

Supplier's development requires that the organization change its posture in relation to its suppliers. Traditional buyer- supplier relationship was adversarial each party seeking to maximize its own benefit from the relationship. Supplier's development requires that this relationship become collaborative such that the supplier and the buyer work together to maximize their market benefits. Supplier development programs can either results-oriented or process oriented. Result oriented program focus on solving specific problems for suppliers and normally involve step-by- step changes relating to suppliers cost, quality and delivery. Hartley and Jones identify three characteristics of results – oriented supplier development. The process is

standardized and buyer driven, the changes made are primarily technical. The process is of short duration and requires limited follow-up. With this approach, the supplier improves while the buyer's supplier development team is on site and the achieved level of performance can be maintained after the team has left.

Process – oriented programs focus on increasing the supplier's ability to make product improvement without hands- on assistance from the buyer. This requires the supplier to learn the problem- solving technique required for continuous improvements.

The Steps of Supplier Development

According to Lysons and Farrington, (2012) there are nine steps in a typical supplier development program. The actual process may differ according to the organization whether the development is primarily results oriented or process oriented. These include:

1. Identifying critical products; - this is done using portfolio approach. These will be mainly strategic and bottlenecks products.
2. Identifying critical suppliers, this includes considering the capacity of the supplier by identifying three levels of capability i.e. maintenance capability (the ability to maintain a particular level of performance consistently), improvement capability(that which affects the pace of performance).Improvement and evolutionary capability (the capacity for capability building which is different from dynamic capabilities in that the emphases is less on adapting, integrating and reconfiguring internal resources in response to changing environments and more on the sustained accumulation of the other two capabilities.), whether present suppliers capable of future needs and whether present suppliers are worthy developing or if it's time to source new ones.
3. Appraising supplier performance.
4. Determining the gap between present and desired supplier performance. A gap analysis involves identifying the differences between the current and a desired business situation. Gaps may be considered from a supply- side as well as a demand – side perspective. There may also be combined gaps such as the level of collaboration or where the level of a purchaser–supplier relationship satisfies neither party.
5. Form cross-functional supplier development team this team will be responsible for appraising present and potential suppliers. Identifying gaps and negotiating with suppliers to try to device mutually acceptable resolution of problems.
6. Meet with suppliers top management team. This provide an opportunity for both sides to know each other as individual, discuss areas of cooperation not previously indentified, exchange views frankly and build trust.
7. Agree how the perceived gaps can be bridged. Approach may include seconding purchaser's staff to suppliers and vice versa, joint value analysis exercises, improved costing approaches, purchase on site audits at the suppliers premises.

8. Set deadlines for achieving improvements. These should be reasonably agreed by both parties and enforced strictly. The supplier should understand that failure to effect improvement by the agreed date may lead to loss of business. The emphasis should be on constructive help rather than punitive measures.
9. Monitor improvements even after achievement of the required standards, the performance of suppliers should be carefully monitored.

People Management

The key to effective quality practice is the management of people in an organization. Sultani, (2005) argue that the effective implementation of TQM requires that all employees, from top to the shop or office floor, develop a commitment to continuous improvement is an integral part of their daily work. Organizations which are quality oriented focuses internally on marrying effective systems and human relations and ensuring communication to and from suppliers and customers. Organizations need to align the HR policies with quality management to ensure integration. HRM policies can be adopted to facilitate the development of the necessary motivation, attitude and competence required for TQM. The HRM policies and practices that are critical to the success of TQM programs include employee involvement, empowerment, organizational culture, recruitment, selection and career development, training and education performance appraisal, compensation and recognition, employee wellbeing, motivation and communication. The elements of employee voice are participation and involvement.

Participation and Involvement

Participation takes place when employees play a greater part in the decision making process by being given opportunity to influence management decisions and contribute to the improvement of organizational performance. Williams and Adam Smith (2006) explain the term participation refers to arrangements that give workers same influence over organizational and workplace decisions. Involvement takes place when employees are able to discuss issues that affect them with management. Williams and Adam Smith (2006) suggest that this term is most usefully applied to management initiatives that are designed to further in the flow of communication at work as a means of enhancing the organizational comfort of employee. Oakland (1989) argues that everyone in the organization from top to bottom must be involved. People are the source of ideas and innovation, their expertise, experience, knowledge and cooperation have to be harnessed to get these ideas implemented.

Organizational Culture

Organizational culture can be described in terms of values, norms and the management style Armstrong (2012). Culture is a significant determinant of the success of strategy implementation. Organizations have seen the need to introduce both quality systems and quality culture to facilitate the quality process. Quality culture is culture that natures high trust social

relationships and respect for the individuals, a shared sense of membership of the organization and belief that continuous improvement is for the common good (Hill,1991).

Continuous learning

Continuous learning is important in quality improvement process. The idea of learning is to find new ways of carrying out activities so that outputs of the organization can closely match the requirements of its customers. Oakland (1993) argues that the employee, supervisors are to be won over, by training, leadership and recognition. Therefore fundamental to quality improvement is the availability of adequate supply of people who are educated in the philosophy and technical aspects of quality. Introducing TQM requires awareness training to help develop attitude and values relating to quality and skills and techniques of quality improvement.

Performance appraisal

According to James (1996) performance appraisal is a systematic evaluation of an individual's job related performance outcome. It attempts to measure employee performance Vis avis the organizational goals and objectives. Oakland (2004) argues that the main thrust of appraisal process is alignment of personnel, team and corporate goals coupled with appraisals to help individuals achieve their full potential. Sultani et al.,(2005) argues that reliance on output to an input-output link means that performance and development reviews now focus on what one sets to do, what was achieved, how it was done and what was learnt is a result. In service organizations, managerial performance is assessed by examining three key areas – business performance, HRM effectiveness and leadership in deploying and practicing leadership through quality.

Recruitment, selection and career development

According to Armstrong (2012), recruitment is the process of finding and engaging people the organization needs. Selection is that part of the recruitment process concerned with deciding which applicant or candidates should be appointed to jobs. The candidate qualities to look for in a quality conscious organization include, a willingness to receive new trend and to expand job values, to try new ideas and problem solving techniques to work patiently in teams and within and across departments and to be enough of a team player to be evaluated and rewarded on a team basis. Clinton et al.,(1994) organization must take a lead in attracting, retaining and motivating a high quality workforce . Successful recruitment and selection of employees with the proper knowledge and skills, abilities and attitudes compatible with TQM philosophy can be a driving force supporting continued TQM effectiveness.

Compensation and recognition

All pay and reward including promotions, bonuses and recognition either monetary or non monetary is the concern of compensation. Key to development of the quality culture is the provision of recognition rather than rewards. The use of award scheme as a way of recognizing

outstanding performance is recommended. Such schemes may include tokens or prizes of significant value with the aim being to provide recognition. In cases where there is an expectation amongst employees that they should receive increased pay in return for taking greater responsibility for quality, the management should consider that fact. Snape et al., (1996) observed that pay incentives cannot be used as a standalone programmes, instead, financial incentives should be used sensitively as part of broader quality management implementation strategy involving leadership, training, communication among others.

Employee wellbeing

The employees' welfare and satisfaction have an influence on the quality culture. Wellbeing at work exists when people are happy within their lot-what they do, how they are treated, how they get on with others. The wellbeing of employees depends on the quality of working life provided by the employers, the feelings of satisfaction and happiness arising from the work itself and the work environment (Armstrong 2012).

Employee motivation

Motivation is concerned with the strength and direction of behavior and the factor that influence people to behave in certain ways Armstrong, (2012). The main motivation theories include content and expectancy theories. The content/needs theory focuses on the content of motivation in the shape of needs. Its basis is the belief that an unsatisfied need creates tension and a state of disequilibrium. To restore a balance, a goal is identified that will satisfy the need and a behavior. Pathway is selected that will lead to achievement of the goal and satisfaction of the need.

Expectancy theory focuses on how motivation affects performance and describes how people make choices about desired goals. It is generally accepted, as the leading theory of motivation and has become an important basis for explaining what motivates people to work. Motivation strategies aim to create a working environment and develop policies that will provide for higher levels of performance for employees.(Armstrong, 2012).

Communication

Managements and individual managers need to communicate to employees about the objectives, strategies, policies and performance of organization what they are expected to do; learning and development opportunities and any proposed changes work arrangements and requirements etc. Quality management requires the communication of different type of information such as information about progress of quality management system and corrective action that are being taken. When quality management system is being implemented, it is important to communicate with everybody as that all employees are kept informed about the changes going around.

Continuous Improvement

The step by step improvement known as Keizen, a Japanese word is a philosophy of continuous improvement of all employees in an organization so that they can perform their tasks better. The key aspect of Keizen is that it is an ongoing process. The teams are employees from all areas involved in that process which has an all round of the process and can implement the changes on the report. Keizen require three things. That is operating procedures, total involvement and training. They make the job more productive and less tiring, more efficient or safer. To improve equipment procedures there can be combined in abroad improvement plan (Robinson, 1991)

Conclusions and Recommendations

Quality is an important attribute in product and service. It provides a competitor advantage, meeting or exceeding customers' expectations. Quality is key in innovation solutions that meet new requirements. Benchmarking provides a very credible basis for assessing the kind of knowledge and skills required by the managers and helps in evaluating the new product against that of the industry leader. Redesigning jobs is not easy; changes in one part of a job structure are bound to bring about changes elsewhere. The approach to work structuring and job design embodied in some aspects of business process re engineering focuses on business processes rather than on tasks and operational structures in designing work. Organizations employing BPR enjoy reduced costs of production and improved relations with their customers. In terms of people management, the way they are managed and developed at work has been recognized as one of the primary keys to improved organizational performance.

On the general level, successful organization share a fundamental philosophy to value and invest in their employees and in particular through employee empowerment of involvement, training and development, teams and team work, review and continuous improvement, effective communication and strategic alignment of human resource management (HRM) policies.

With increased funding in Research and Development by the Kenya government, there should be an improvement on the product outcome from the local industries. Organizations should embrace TQM philosophy, observing quality and ensure that products will attract both local and the regional markets. Restructuring key local industries that use local raw materials will require exploiting opportunities in adding value to imports and to capture the last step of value addition.

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