

**SUSTAINING CONTINUAL IMPROVEMENT IN ISO
CERTIFICATION IN PUBLIC INSTITUTIONS: A CASE
OF ISO CERTIFIED PUBLIC INSTITUTIONS IN KENYA**

By

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**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILMENT FOR THE REQUIREMENTS FOR THE AWARD OF THE
DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF
BUSINESS,**

UNIVERSITY OF NAIROBI

2010

DECLARATION

This research project report is my original work and has not been presented in any other university, either in part or as a whole.

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ACKNOWLEDGEMENTS

I would like to acknowledge most sincerely the assistance and wise counsel that I received from various people. I extend my sincere gratitude to the staff of the ISO QMS certified public institutions I interviewed for the support and information they provided to me so that I could be able to finalize my project. My appreciation also goes to my supervisors, Mr. Akelo E.O and Mr. Magutu P.O. Their personal will and guidance assisted me to accomplish my project.

Many thanks to my wife Faith for her support, encouragement and patience throughout the duration of my study. Much thanks to my sons Glenn and Timothy for being the drive behind my every day struggle.

I would like to acknowledge with gratitude the guidance given to me by the MBA Coordination Office as well as the University Library Staff while I was formulating my research area and input in developing my research project.

DEDICATION

This research project is dedicated to the people who are very close to my heart. To my wife Faith and our sons Glenn and Timothy for their love and inspiration. I also dedicate this study to my father and mother whose hard work and sacrifice made me go through my education and to be who I am today.

To my children, I hope this research project will inspire you to read and become important men in the society.

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LIST OF ACRONYMS

BPR	-	Business Process Reengineering
BVQI	-	Bureau Veritas Quality International
CCN	-	City Council of Nairobi
EAPI	-	East African Packaging industries
ERP	-	Enterprise Resource Planning
ISO	-	International Standards Organization
KEBS	-	Kenya Bureau of Standards,
QMS	-	Quality Management System
SGS (K)	-	Societe Generale de Surveillance
SOPs	-	Standard Operating Procedures
SPSS	-	Statistical Package for Social Sciences
PDCA	-	Plan, Do, Check, Act
TQM	-	Total Quality Management
VSM	-	Value Stream Mapping

OPERATIONAL DEFINITION OF TERMS

Continual improvement- is a type of change that is focused on increasing the effectiveness and/or efficiency of an organization to fulfill its policy and objectives

Documentation requirements

QMS Enforcement- refers to compelling observance of or obedience to the Quality Management System

Resources- refer to the total means available to a company for increasing production or profit, including plant, labor, raw material and or assets.

Product realization- refers to focusing on *product* strategy and vision.

Measurement- refers to determination of dimension, quantity, or capacity of an organization under study

Analysis – refers to separation of continual improvement components into their constituent parts for individual study.

Improvement- getting better and better of an existing state or situation within an organization from time to time

Customer data- refers to all or any information about organizations customers critical to gaining a more complete picture of what is going on.

Self assessment- refers to a comprehensive, systematic and regular review of an organization's activities and results. The Self-Assessment process allows the organization to discern clearly its strengths and areas in which improvements can be made and culminates in planned improvement actions which are then monitored for progress.

Data assessment- is the determination of quantitative or qualitative value of data related to a concrete situation and a recognized threat.

Preventive action- is a change implemented to address a weakness in a management system that is not yet responsible for causing nonconforming product or service.

Systematic improvement methods- refers to biased improvement methods resulting from flaws integral to the system within which the bias arises

ABSTRACT

In view of the challenges faced in operationalization and implementation of Quality management systems in ISO certified state corporations, this research project provides for an avenue to establish the post certification state of ISO certified public institutions in Kenya today. The broader objective of this study thus was to establish how selected ISO certified public institutions sustain continual improvement of performance after certification and explore the challenges they face.

The specific objectives were: To establish the type of ISO QMS the selected public institutions are certified in and their certification bodies, to establish whether the selected institutions possess any technical expertise in the management of continual improvement and the extent to which selected ISO certified institutions sustain continual improvement of performance after certification. This study also explored the challenges facing selected ISO certified public institutions in ensuring continual improvement of performance after certification.

This study adopted descriptive research design. The target population was all employees of seventeen ISO certified public institutions in Nairobi that had been awarded the ISO QMS certification. The study utilized both primary and secondary data. The study administered questionnaires to a total of 36 respondents working in the sustainability and compliance section across the organizations departments under study. Stratified random sampling was used to come up with a representative sample size. Secondary data was gathered from various authoritative sources including from the Kenyan certification firms namely Kenya Bureau of Standards (KBS), SGS (K) Ltd and Bureau Veritas Quality International (BVQI).

The findings of this research project were that the collection of customer related data for analysis in order to obtain information for continual improvement was a satisfactory rating of 86.1% good while the rating in measurement, analysis and improvement was only 50% good. Since measurement, analysis and improvement is a major component of continual improvement this study finds most of the public institutions wanting in this pillar of ISO QMS.

CHAPTER ONE: INTRODUCTION

1.1. Background

Continual improvement is a type of change that is focused on increasing the effectiveness and/or efficiency of an organization to fulfill its policy and objectives. Continual improvement may be realized in business strategy, business results, and customer, employee and supplier relationships. It simply means 'getting better all the time. One of the eight principles of ISO certification is Continual Improvement. The principle states that a certified organization shall continually improve the effectiveness of the management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. The organization should identify measurement methods and should perform measurements to evaluate process performance. Measurements should be used for managing daily operations, for evaluation of the processes that may be suitable for small-step or ongoing continual improvements (Standard ISO 9004: 2000).

Management initiatives utilizing the continual improvement management system framework share a core set of elements critical to institutionalizing a culture of continual improvement and consistent performance success. Typically, they are designed to affect performance improvement in a single management area. Management areas include environmental performance; public and occupational health and safety; process, product, and service quality; operational and capital asset financial performance; and human resources and skill development.

The continual improvement management system-based initiatives – such as ISO 14001 and ISO 9002 among their components and underlying logic, regardless of which management area(s) they support. Not only does each of the continual improvement management system-based initiatives have four high-level components - Plan, Do, Check, and Act - each includes a similar set of more detailed elements.

Continual improvement may also be realized through Benchmarking. Benchmarking has been defined as making reference or measurement of standards using comparisons. It allows for continuous activities of identifying, understanding and

adapting best practice and processes that will lead to superior performance. Benchmarking measures an organization's products, services and processes, to establish targets, priorities and improvements, leading to competitive advantage and/or cost reductions (DTI Survey 2006).

Changes in structures and in processes within the business environment may be realized through Business Process Reengineering (BPR). The entire technological, human, and organizational dimensions may be changed in BPR. In general it allows an efficient and effective change in the manner in which work is performed. All these changes impose the need for organizational transformation, where the entire processes and organization climate and organization structure are changed. BPR has been defined as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality, service and speed (Davenport, 1993).

1.1.1 ISO Certification and Continual Improvement

ISO is an international agency consisting of 158 member countries, Kenya included. ISO was formed in 1947 and is based in Geneva, Switzerland. It develops international standards to foster increased trade of products and services. Global competition calls for higher levels of quality, efficiency and effective delivery of service or products. In Kenya, several organizations both public and private have embraced ISO certification standards as a tool of management to compete and enhance their performance as they provide services to both local and international clients (ISO survey, 2005).

ISO Quality Management System (QMS) is a system whose frame work of processes and procedures are used to ensure that an organization can fulfill all tasks required to achieve its objectives. A complete system would include accountability (an assignment of personal responsibilities), a schedule for activities to be completed, auditing tools to implement corrective actions and creating a feedback processes for continual improvement. An example of such a system is the Deming cycle of Plan, Do, Check, Act (PDCA) (Standard ISO 9004: 2000).

Continual improvement should lead to better results such as price, cost, productivity, time to market, delivery, responsiveness, profit and customer and employee satisfaction. Continual improvement is about the entire organization and everything it does. It has to be a prime concern of executive management and its success depends upon commitment from the top. The commitment must also be highly visible. It is not enough to have a quality policy signed by the chief executive. If executive management does not demonstrate its commitment by doing what it says it will do it cannot expect others to be committed to the policy (Standard ISO 9001: 2008).

ISO standard states that continual improvement of the organization's overall performance should be a permanent objective of the organization. ISO standard gives guidance on continual improvement of an organization's overall performance and efficiency, as well as its effectiveness. The recommendations in the standard give guidance for organizations whose top management wishes to move beyond the requirements of certification standard, in pursuit of continual improvement of performance (Standard ISO 9004: 2000).

Along with improved services several benefits have been listed when an organization implements ISO standards, among them are efficient operations, achievement of customer satisfaction, improvement of financial results, satisfaction of stakeholders, sustainability, continual improvement, international recognition, improved quality and the third party audits associated with certification are considered as image builder (ISO survey, 2007).

1.1.2 Certified Public Institutions in Kenya

Public sector organizations have been relatively late in adopting ISO standards in comparison with those from the private sector. While the standards have the potential to provide many benefits, they could also reinforce certain detrimental orthodoxies. ISO standard certifications programme, which as of January 2007 had well over 200 certified companies in Kenya is handled through four agencies, namely: Kenya Bureau of Standards (KEBS), Bureau Veritas Quality International (BVQI) and SGS (K) Ltd. ISO certification programmes have further created awareness and lead to adoption of quality practices in the country (KEBS, 2007).

Many organizations particularly in the early stages of the history of ISO standards, obtained certification for marketing-related reasons (Taylor, 1995). Some of these organizations unscrupulously used the standards to suggest higher product quality, taking advantage of the high level of public ignorance of the standards. Other organizations have used the standards as a part of broader differentiation strategy (Anderson et al., 1999; Naveh et al., 2004). As first movers in up-taking this innovation, these organizations have used the standards as a relatively cost-effective signal to customers and regulators that they have quality management systems in place. Large customers, particularly governments and multi-national corporations, have made ISO standards mandatory for their suppliers (Brown and Wiele, 1995). As a result, many suppliers feel compelled to register in order to get themselves onto supplier lists (Lee and Palmer, 1999; Hughes et al., 2000). ISO 9000 has become an “order-qualifier”, and not necessarily an “order-winner” (Meegan and Taylor, 1997).

1.2. Statement of the problem

Public institutions in Kenya that are ISO certified should have in place measures and mechanisms to ensure continual improvement, that are devoid of management deficiencies as encompassed in various ISO management systems. However, this is not known to be the case, as most of them seem to operate in the background of several challenges, which impair implementation of the already mentioned ISO management systems leading to distortion of continual improvements in various areas of Management.

Some of the challenges a number of these public institutions have been facing in implementation of the said systems include; lack of mechanisms to address documentation requirements for continual improvement, lack of enforcement and taking of a leading role by top management to lack of resources, product realization, commitment, positive attitude, positive working culture, effective information flow, staff training in continual improvement, formalized systems and experience in auditing.

Ignorance of measurement, analysis and improvement and lack of collection of customer related data for analysis in order to obtain information for improvement and

use of self assessment on quality management systems and the assessment of various data in order to identify areas of improvements.

A number of these public organizations have neither used corrective action for evaluating and eliminating recorded problems affecting their performance nor used preventive action for loss prevention.

It is thus in view of these that the researcher sought to establish how various ISO certified public institutions in Kenya sustain continual improvement of performance after certification and explore the challenges they face. The research was to establishing the above by researching on the following questions.

1.3. Research Questions

- i) What type of ISO QMS selected public institutions are certified in and their certification bodies?
- ii) Do the selected institutions possess any technical expertise in the management of continual improvement?
- iii) To what extend does the selected ISO certified institutions sustain continual improvement of performance after certification?
- iv) What are the challenges facing selected ISO certified public institutions in ensuring continual improvement of performance after certification?

1.4. Research Objectives

1.4.1 General objectives of the study

To establish how selected ISO certified public institutions in Kenya sustain continual improvement of performance after certification and explore the challenges they face.

1.4.2 Specific objectives of the study

- i) To establish the type of ISO QMS selected public institutions are certified in and their certification bodies.
- ii) To establish whether the selected institutions posses any technical expertise in the management of continual improvement.

- iii) To establish the extent to which selected ISO certified institutions sustain continual improvement of performance after certification.
- iv) To determine the challenges facing selected ISO certified public institutions in ensuring continual improvement of performance after certification.

1.5. Scope of the Study

The study sought to establish how selected ISO certified public institutions in Kenya sustain continual improvement of performance after certification and explore the challenges they face. This study covered seventeen selected ISO certified public institutions within Nairobi and targeted three employees conversant with ISO management systems impact assessment, policy development and implementation.

1.6. Significance of the study

The study findings can benefit various stakeholders namely; Public Institutions ISO standards implementers as they shall be able to know whether the continual improvement can be realized during post certification stage. ISO standard quality management system trainers/consultants who will be able to have a clear view of challenges faced in the service industry during post certification stage. This study also offers academicians and researchers further field of study in ISO standards post implementation stage.

1.7. Assumptions of the Study

1. The study assumed that all respondents were willing to respond and provide all the needed information.
2. The study assumed that all respondents were honest and that the information they give can be depended upon to make conclusions and deduction for the future.
3. The study assumed that the respondents had the requisite knowledge on the area of study to be able to provide reliable information.
4. The study assumed that the sample selected was representative and hence the findings can be generalized to represent the entire target population.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of the related literature on the subject under study presented by various researchers, scholars, analysts and authors. The review has covered the various issues and more particularly ISO Quality Management Systems, ISO Certification Pillars, Challenges in ISO certification implementation, Continual Improvement, and different continuous improvement approaches presented by various 'gurus' in the field of management. Among the approaches include; Kaizen, Value Stream Mapping, Total Quality Management, Enterprise Resource Planning, Business Process Re-engineering and Benchmarking.

2.2 Theoretical Review

This study was guided by the vast knowledge base of management systems and more specifically those relating to ISO and the several approaches available on continuous improvement. This section reviews the theoretical body of knowledge on continuous improvement and much so on the management challenges affecting the achievement of continuous improvement with regard to international organization for standardization management systems.

The section also reviews the emerging approaches in continuous improvement and draw attention to the various independent variables that could affect the implementation of various management systems typical of continuous improvements and more so which have been mentioned herein above. In addition, this section extensively makes reference to other research studies that have been done on the similar problem area. Continuous improvement measures and mechanisms can be numerous and diverse depending on the industry under review. The researcher therefore tried to narrow the focus of this section to the key challenges facing continuous improvement in ISO related management systems.

2.2.1 ISO (Quality Management Systems)

The ISO 9000 and ISO 14000 families are among ISO's best known quality management systems standards ever. ISO 9001:2008 and ISO 14001: 2004 are implemented by over a million organizations in 175 countries. The ISO 9000 family

addresses "Quality Management". This means what the organization does to fulfill, the customer's quality requirements, applicable regulatory requirements, while aiming to enhance customer satisfaction, and achieve continual improvement of its performance in pursuit of these objectives. ISO 9001:2008 is the standard that provides a set of standardized requirements for a quality management system, regardless of what the user organization does, its size, or whether it is in the private, or public sector. It is the only standard in the family against which organizations can be certified, although certification is not a compulsory requirement of the standard (ISO survey 2007).

The ISO 14000 family addresses "Environmental Management". This means what the organization does to minimize harmful effects on the environment caused by its activities, and to achieve continual improvement of its environmental performance. Though ISO has many other standards dealing with specific environmental issues, the intention of ISO 14001:2004 is to provide a framework for a holistic, strategic approach to the organization's environmental policy, plans and actions (ISO survey 2007).

2.2.2 ISO Certification Pillars

The standard document has eight clauses which give conditions that a firm to be certified has to meet. The areas covered include; QMS document requirements; Management responsibility; Resource management; Product realization; and Measurement, analysis and improvement. The standard suggests that each one of these five areas is required to assure that the basic processes of a company are well controlled. Together, the five sections define what companies consistently should do in order to provide products that meet customer and applicable statutory or regulatory requirements and to continually enhance customer satisfaction by continually improving their QMSs.

The standard set principles that can be used by senior management as a framework to guide their organizations towards improved performance. These principles, as they appear in QMSs fundamentals and vocabulary, and in guidelines for performance improvements are: Customer focus: Organizations depend on their customers, and

therefore, should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations; Leadership: Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives; Involvement of people: People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit; Process approach: A desired result is achieved more efficiently when activities and related resources are managed as a process; System approach to management: Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives; Continual improvement: Continual improvement of the organization's overall performance should be a permanent objective of the organization; Factual approach to decision-making: Effective decisions are based on the analysis of data and information; and Mutually beneficial supplier relationships: An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value (Standard ISO 9001: 2008).

2.2.3 Challenges in QMS implementation

There are a number of challenges that any organization may face in implementing an effective QMS. Ghobadian and Gallear (1997) found out that some of the challenges organizations may face during implementation of QMS include lack of financial and human resources, inadequate technical knowledge of quality management, a lack of knowledge of formalized systems, and a lack of experience in internal auditing. According to Temtime (2003), he came up with come up with implementation challenges which consist of: constraints on resources; lack of top management commitment; lack of understanding of the standards requirements; lack of employee commitment; and precision in documentation and control.

When an organization's systems are documented such as is the requirement by ISO standard, changes to the system must follow procedures that are sometimes long and laborious to follow. The dilemma for managers is to implement and sustain the system by continual improvement as required by ISO standard

2.2.4 Continual improvement

Generally, the implementation of QMS can be divided into five stages; planning (plan), documentation (do), verification and validation (check), deployment (act) and continual improvement. The continual improvement stage is actually the phase where maintenance of the quality system is carried out (Nanda, 2005).

During the maintenance stage, more emphasis must be placed on continual improvement and preventive action. In addition, Nanda (2005) states that at this stage internal quality audits must be utilized not merely to verify adherence to the defined QMS but also to explore opportunities for continual improvement. Chin et al. (2000) also stressed that continual maintenance of the QMS is essential to satisfy the surveillance visits by registrars, and to monitor and improve the system. This phase is important if the organization wants to continually improve and reap the long term benefits of having a quality management system in place.

Van de Water (2000) defines the maintenance of a quality management system as “the application of management concepts to aspects of the process of quality management with the objective of keeping this process in a perfectly well defined state, to keep the introduced philosophy highly evolving for the organization’s members, to bring it into a state seen fit to control all aspects of quality”.

To prevent stagnation of the process of quality management and its translation into concrete activities on all levels of the organization, maintenance of the QMS is necessary for organizations as it would provide constant monitoring, controlling, assessing, and improving through both the technical and socio-cultural aspects to quality management (Van de Water, 2000; Stewart, 1995). If the implementation stage outlines “what” needs to be there, the maintenance phase is about making the most of “what” is there to improve the QMS of the organization. During this stage, emphasis is placed on activities such as the management reviews, corrective and preventive actions, collection and analysis of data, measurement of performance, and continual improvement.

The organization shall continually improve the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. They should develop mechanism or tools that should identify measurement methods and should perform measurements to evaluate process performance. The organization should incorporate these measurements into processes and use the measurements in process management. Measurements should be used for managing daily operations, for evaluation of the processes that may be suitable for small-step or ongoing continual improvements, as well as for breakthrough projects, according to the vision and strategic objectives of the organization. Measurements of process performance should cover the needs and expectations of interested parties in a balanced manner. Examples include capability, reaction time, cycle time or through put, measurable aspects of dependability, yield, the effectiveness and efficiency of the organization's people, utilization of technologies, waste reduction, and cost allocation and reduction (Standard ISO 9004: 2000).

Analysis of data decisions should be based on data obtained from measurements and information collected as described in the Standard. In this context, the organization should analyze data from its various sources to assess performance against plans, objectives and other defined goals, and to identify areas for improvement including possible benefits for interested parties. Decisions based on facts require effective and efficient actions such as valid analysis methods, appropriate statistical techniques, and making decisions and taking actions based on results of logical analyses, as balanced with experience and intuition. Analysis of data can help to determine the root cause of existing or potential problems, and therefore guide decisions about the corrective and preventive actions needed for improvement (Bernhardt, 2003).

For an effective evaluation by management of the total performance of the organization, data and information from all parts of the organization should be integrated and analyzed. The organization's overall performance should be presented in a format that is suitable for different levels of the organization. The results of this analysis can be used by the organization to determine trends, customer satisfaction, satisfaction of other interested parties, effectiveness and efficiency of its processes, supplier contribution, success of its performance improvement objectives, economics

of quality, financial and market-related performance, benchmarking of its performance, and competitiveness (Kouzes & Posner, 2002).

2.2.5 Kaizen

Kaizen means "improvement". Kaizen strategy calls for never-ending efforts for improvement involving everyone in the organization managers and workers alike (Masaaki Imai, 2001).

2.2.5.1 Kaizen and Management

Management has two major components: maintenance, and improvement. The objective of the maintenance function is to maintain current technological, managerial, and operating standards. The improvement function is aimed at improving current standards. Under the maintenance function, the management must first establish policies, rules, directives and standard operating procedures (SOPs) and then work towards ensuring that everybody follows SOP. The latter is achieved through a combination of discipline and human resource development measures. Under the improvement function, management works continuously towards revising the current standards, once they have been mastered, and establishing higher ones. Improvement can be broken down between innovation and Kaizen. Innovation involves a drastic improvement in the existing process and requires large investments. Kaizen signifies small improvements as a result of coordinated continuous efforts by all employees (Masaaki Imai, 2001).

2.2.5.2 Implementation of Kaizen Strategy

One of the most difficult aspects of introducing and implementing Kaizen strategy is assuring its continuity. When a company introduces something new, such as quality circles, or Total Quality Management (TQM), it experiences some initial success, but soon such success disappear like fireworks on summer night and after a while nothing is left, and management keeps looking for a new flavor of the month. This if because the company lacks the first three most important conditions for the successful introduction and implementation of Kaizen strategy (Masaaki Imai, 2001).

2.2.5.3 Process-Oriented Thinking vs. Result-Oriented Thinking

Kaizen concentrates at improving the process rather than at achieving certain results. Such managerial attitudes and process thinking make a major difference in how an organization masters change and achieves improvements.

2.2.5.4 Quick and Easy Kaizen

Quick and Easy Kaizen (or Mini-Kaizen) is aimed at increasing productivity, quality, and worker satisfaction, all from a very grassroots level. Every company employee is encouraged to come up with ideas however small that could improve his/her particular job activity, job environment or any company process for that matter. The employees are also encouraged to implement their ideas as small changes can be done by the worker him or herself with very little investment of time (Masaaki Imai, 2001).

Quick and easy Kaizen helps eliminate or reduce wastes, promotes personal growth of employees and the company, provides guidance for employees, and serves as a barometer of leadership. Each kaizen may be small, but the cumulative effect is tremendous (Masaaki Imai, 2001).

2.2.6 Value Stream Mapping - Making Improvements that add value

Organizations continually strive for lean and efficient operations. Particularly in the current economic climate, a company may wish to find opportunities for lean improvement in a department or area, so that can deliver the same value to the customer at lower cost to your organization. However, it can be a challenge identifying where these opportunities are. For example, one may know that you need to improve on the production process, because products are coming back with defects. In such a situation, what do you need to do to improve quality? One option is to put more resources into physical inspections, but the question will still stand will that solve the problem, or will it just add cost to a process that is already flawed somewhere else (Mind Tools Magazine, 2010).

2.2.6.1 Process Improvement

Process improvement is successful only when you address the underlying problem. A useful way of improving processes successfully is to use a lean manufacturing Technique called Value Stream Mapping (VSM). It originated at car manufacturer Toyota, where they called it 'material and information flow mapping.' VSM is now widely used in a variety of industries as a way of identifying improvement projects (Mind Tools Magazine, 2010).

The basic idea behind Value Stream Mapping is that: if the underlying process is right, the outcome will be reliable. To get the process right, you have to understand the sequence of activities that provide value to your customers.

VSM looks at the full, end-to-end process. It helps you map visually how information and materials flow through all of the activities that occur – from the time an order is placed, to the time the product or service is delivered. The start is with customer needs, where the map shows how and when information is received. The end is when the product or service is delivered to the customer, with the map showing how decision-making and communication processes affect the whole flow (Mind Tools Magazine, 2010).

By looking at your process from start (receiving orders or forecasts) to finish (warehousing or distributing the product), you can clearly identify steps where no real value is added, or where there's a bottleneck – and thus, you can eliminate these types of waste. Your original Value Stream Map becomes the baseline for improvement initiatives that eliminate no-value, wasteful activities. Note that the map is only as detailed as it needs to be. In other words, it has to contain enough information about the flow of information and physical products to help you identify problems and potential improvements, but no more than this (Mind Tools Magazine, 2010).

2.2.7 Total Quality Management

At its core, Total Quality Management (TQM) is a management approach to long term success through customer satisfaction. In a TQM effort, all members of an

organization participate in improving processes, products, services and the culture in which they work. The methods for implementing this approach come from the teachings of such quality leaders as Philip B. Crosby, W. Edwards Deming, Armand V. Feigenbaum, Kaoru Ishikawa and Joseph M. Juran (Six Sigma Forum Magazine, 2010)

A core concept in implementing TQM is Deming's 14 points, a set of management practices to help companies increase their quality and productivity: Create constancy of purpose for improving products and services, Adopt the new philosophy, Cease dependence on inspection to achieve quality, End the practice of awarding business on price alone; instead, minimize total cost by working with a single supplier. Improve constantly and forever every process for planning, production and service, Institute training on the job, adopt and institute leadership, drive out fear, break down barriers between staff areas and eliminate slogans, exhortations and targets for the workforce.

Eliminate numerical quotas for the workforce and numerical goals for management, remove barriers that rob people of pride of workmanship, and eliminate the annual rating or merit system. Institute a vigorous program of education and self-improvement for everyone put everybody in the company to work accomplishing the transformation. The term "Total Quality Management" has lost favor in the United States in recent years: "Quality management" is commonly substituted. "Total Quality Management," however, is still used extensively in Europe.

2.2.8 Enterprise Resource Planning (ERP)

Enterprise Resource Planning (ERP) is an integrated computer-based system used to manage internal and external resources, including tangible assets, financial resources, materials, and human resources. Its purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders. Built on a centralized database and normally utilizing a common computing platform, ERP systems consolidate all business operations into a uniform and enterprise-wide system environment (Management Methods, Models and Theory, 2010)

An ERP system can either reside on a centralized server or be distributed across modular hardware and software units that provide "services" and communicate on a local area network. The distributed design allows a business to assemble modules from different vendors without the need for the placement of multiple copies of complex and expensive computer systems in areas which will not use their full capacity (Management Methods, Models and Theory, 2010)

2.2.9 Business Process Reengineering

The Business Process Reengineering method (BPR) is described by Hammer and Champy, (2005) as 'the fundamental reconsideration and the radical redesign of organizational processes, in order to achieve drastic improvement of current performance in cost, services and speed'.

Rather than organizing a firm into functional specialties (like production, accounting, marketing, etc.) and to look at the tasks that each function performs, Hammer and Champy recommend that we should look at complete processes. From materials acquisition, towards production, towards marketing and distribution. One should rebuild the firm into a series of processes. Value creation for the customer is the leading factor for BPR and information technology often plays an important enabling role (Management Methods, Models and Theory, 2010).

2.3 Empirical Literature Review

In developing the content for this study, and most importantly the theoretical framework, the researcher reviewed several sources of information that relates to the objective of the study. The study is concerned primarily with the challenges facing continuous improvement with reference to ISO management systems' standards even though other approaches that reinforce ISO standards that can be treated independently will as well be highlighted.

Many studies have been conducted on the implementation of ISO Standard in small, medium, and large size companies both in the manufacturing (Bhuiyan and Alam,

2005; Lipovatz et al., 1999; Beattie and Sohal, 1999) and service sectors (Poksinska et al., 2006; Karim et al., 2005; Efstratiadis et al., 2000).

Comparative studies have also been done on ISO standards on manufacturing and service organizations in terms of levels of resources required, motivations for implementation, difficulties faced, benefits gained and management practices applied in the implementation of the ISO standard (Singh et al., 2006) and within the same industries but different countries (Ahmed et al., 2005).

In Kenya similar studies have been done such as, “the strategic challenges faced by manufacturing firms in adopting ISO standard” (Gatimu, 2008), “the role of ISO 9000 certification in developing competitive advantage” (Kimani, 2008; Mbugua, 2006), “employees’ perception of ISO standard” (Nyambala, 2007) and “improvement in operation performance” (Kimani, 2008).

Extensive studies have been done in addressing organizations’ responses to changes in the external environment e.g. (Kibunya, 2008; Wanjagua, 2008; Kimani, 2006). However, not much literature is found on the maintenance of ISO standard, the post-certification period and how the system is sustained by the principle of continual improvement or whether indeed there is continual improvement.

As documented in ISO guidelines for performance improvements, the system has its internal procedures for continual improvement. Continual improvement may be defined as the maintenance phase of the system. This maintenance phase is important as it entails mechanisms necessary to facilitate continual improvement of the quality management system in order to make it sustainable and adapt to changes in the business environment (Van de Water, 2000; Maina, 2007).

Despite the ISO numerical success in having organizations adopt ISO standards, considerable doubts and criticism remain in relation to actual benefits achieved and flexibility within which organization can adapt to both internal and external environments. Criticism has also been directed at ISO’s primary concern with the

generation of documentation to describe steps to be taken when problems are encountered. Wilkinson et al, (1994), did a survey of UK quality management which concluded that ISO had been reduced to a ‘mechanical approach’ and as being ‘paperwork driven’.

Gatimu (2008) in her study “The strategic challenges faced by firms in the adoption of ISO 9000 QMS: The case of Manufacturing firms in Nairobi Industrial Area”, established that the major benefits of ISO 9001:2000 certification and adoption in the manufacturing industries are seen to be less repair work, less problems in defects liabilities, improved internal communication, improved external communication, the client perceives higher quality of product, improvement in internal performance, appraisal system, enhanced competitive of company and continual improvement of operations as well as a valuable marketing tool.

Kimani (2008) in his study “The role of ISO 90001 certification in developing advantages for Kenyan organization” established that benefits and competitive advantages are realized within 2 years of implementation. He suggests further researches to be done to establish how much longer the benefits of QMS are sustainable beyond this period.

Nyambala (2007) in her study “Employees’ perception of ISO 9001:2000” established that employees’ expectation of the benefits of ISO 9001: 2000 which were very high were not met in the long run.

According to Okwiri, (2009), in his article “Managing for the Sustained Success of an Organization - A Quality Management Approach”, argues out that the standard is not meant to be for third party certification but to provide guidance for improvement of overall performance, efficiency and effectiveness in an organization.

Wanjagua (2008), in her study “Organization responses to external environmental changes: A case study of Kenya Pipeline Company” argues that all companies operate in an environment that is not static but characterized by many changes and challenges. The dynamism of the environment implies that companies have to constantly redesign their strategies in order to remain effective in their operations.

Mbugua (2006) in his study “Sustainable competitive advantage under condition of change at East African Packaging industries “EAPI” - EAPI is ISO 9001:2000 certified, established the firm positioned itself through differentiation focus or cost leadership as a means of developing sustainable competitive advantage. It differentiated by investing in and developing resources that served customers who demanded high quality products and services, but were willing to pay a premium for it. With this marketing strategy in hand the firm focused on well paying, high profitable niche market of agricultural exports which was said to be growth areas of the national economy.

Kibunnya (2008) in his study “A survey of strategic responses to firm to environmental changes in Kenya: A case study of City Council of Nairobi” - CCN is still in the process of acquiring ISO 9001: 2008 certification, concluded that there are many factors that influence the Council among them are political interferes, economical factors that impact on standard of living, levels of income, disposable income and taxation levels.

Wahid and Corner (2009), in their study on “Critical success factors and problems in ISO 9000 maintenance” concluded that, there seems to be similarities in terms of top Management commitment and employee involvement being the top two critical success factors for ISO 9000 maintenance in all the studies conducted. Teamwork is also considered to be one of the critical success factors in ISO 9000 maintenance and this finding is consistent with the findings from the studies by Chin et al. (2000) and Low and Omar (1997). However in their study, Low and Omar described teamwork as “productive relationships”. Furthermore, the current study found that the reward system and communication (human aspects), measurement of performance and understanding of ISO (technical aspects) are four other critical success factors in maintaining the quality system. In contrast to the other studies, the current study also found continual improvement of process, people, and system is what kept the quality system alive for organizations to progress, grow and remain competitive.

None of these studies above has researched on how Kenyan public institutions are sustaining ISO standard post-certification period based on the principle of continual improvement or whether there is any improvement achieved by this principle.

2.4 Overview of Literature Review

The review explores varying approaches that exist and which contribute in some way to continual improvement. However it does not single it out to a specific channel industry. Because most entities that adopt these approaches for continual improvement are conventional enterprises, most aspects in each are synonymous.

The approaches explored here and whose literature is available include ISO QMS a management system and the challenges encountered in its implementation universally. Others include Kaizen, value stream mapping, total quality management, resource planning, and business process re-engineering, lean operations and benchmarking. The review also highlights the existence of various existing international standards in various areas. Continual improvement is one of the components of international standards which superimpose the existing improvement approaches as discussed in the review. It also alludes to existence of challenges in operationalization and implementation of various management systems and particularly ISO QMS. For the purposes of this research, the research seeks to narrow the scope of this study to cover selected ISO certified state corporations in Kenya.

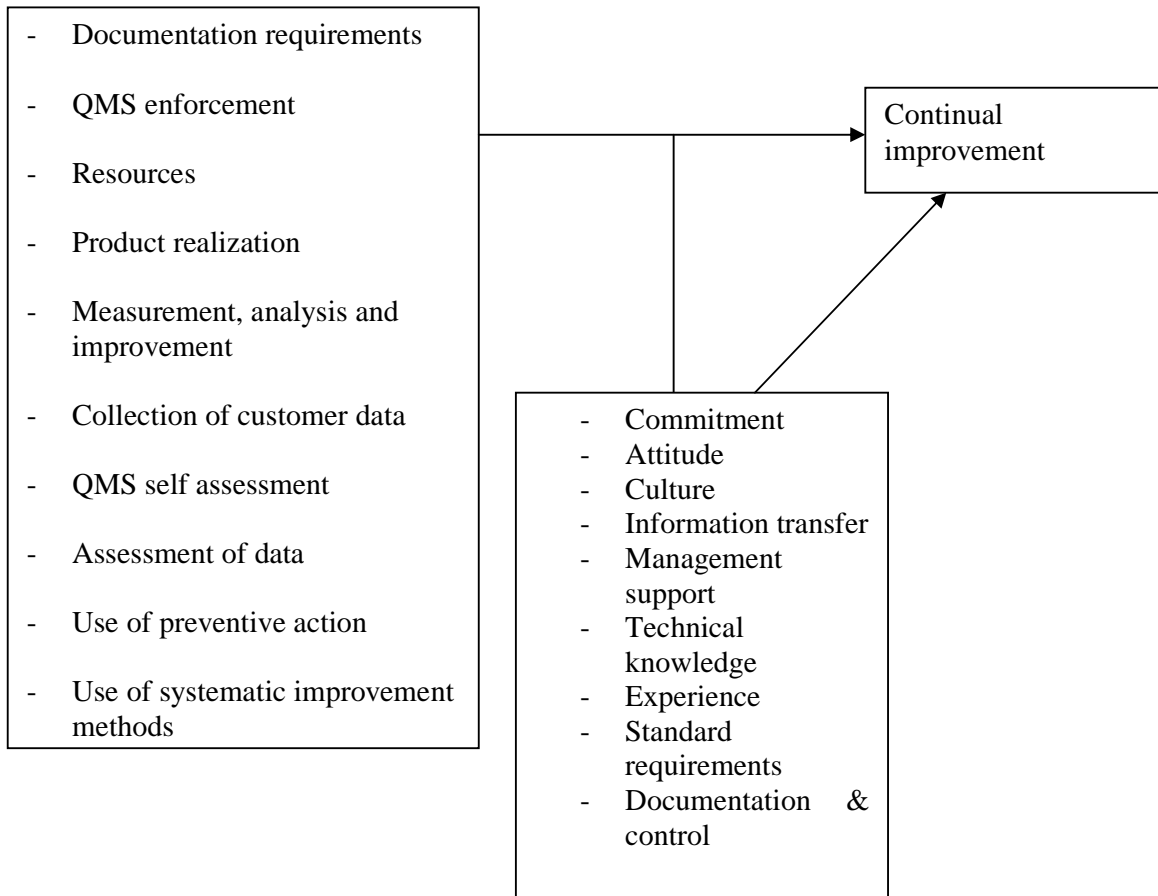
2.5 Conceptual Framework

A conceptual framework helps the reader to quickly see the proposed relationships between the variables in the study and show the same graphically or diagrammatically (Mugenda, 2003). The conceptual framework of this study is based on ten independent variables namely; Documentation requirements, QMS enforcement Resources, Product realization, Measurement, analysis and improvement, Collection of customer data, QMS self assessment, Assessment of data, Use of preventive action and Use of systematic improvement methods.

The framework also identifies the following variables as intervening variables; Commitment, Attitude, Culture, Information transfer, Management support, Technical knowledge, Experience, Standard requirements, Documentation & control.

Figure 2.5 below shows how the various independent variables affect the dependent variables under study.

Figure 2.5: The Conceptualization Model



[Independent Variables]

Intervening variables

[Dependent variable]

(Source: Researcher 2010)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This research design was a descriptive survey meant to establish how selected ISO certified public institutions in Kenya sustain continual improvement of performance after certification and explore the challenges they face. This involved surveys and description of the independent and dependent variables. Descriptive statistical parameters and tables were used in the presentation. To achieve this goal, a questionnaire was administered in this survey to the employees of the selected public institutions that are a subject of this study. This study specifically target Management Representatives (MR) and officers in charge of QMS compliance and sustainability. An elaborate questionnaire was administered to the respondents for their views. This method was chosen as it is inexpensive, does not require too much effort and is standardized.

3.2 Research Design

The type of research design that was used for the project was the descriptive design. This involved a survey or the description of the independent and dependent variables associated with the problem.

Percentages and tables were used to summarize the responses. In view of the fact that the study is mainly descriptive in nature, the researcher is of the opinion that it is possible to draw conclusions without the use of very complicated qualitative and quantitative statistical tools that may jeopardize a very clear presentation of the findings of the research. In collecting the primary data, the researcher used questionnaires. The secondary data was obtained from certifying bodies as well as the Kenya bureau of standards.

3.3 Target population

The target population was all employees of the seventeen ISO certified public institutions in Nairobi that had been awarded the ISO QMS certification. The firms were selected from lists obtained from the Kenyan certification firms namely Kenya Bureau of Standards (KBS), SGS (K) Ltd and Bureau Veritas Quality International (BVQI).

3.4 Sampling and sample size

After a careful data search of the existing ISO certified public institutions in Nairobi, a sample of 51 employees from 17 selected institutions was found to be appropriate.

The sample size was 3 employees taken from each of the selected institutions and stratified random sampling method was used to make sure that all the employees from each selected institutions were equally represented. This enables getting equal representatives and also appropriate information from the different levels of the selected institutions.

Table 3.4: The Sampling Matrix

Category	QMS Management Representative	QMS Compliance & Sustainability officer 1	QMS Compliance & Sustainability officer 2	Total Sample Size
17 selected institutions	17	17	17	51

3.5 Data collection methodology

Questionnaires and interviews were used to collect information from the sampled population. This contained both structured and unstructured questions. Also closed and open ended questions were used to enable acquire as much information as possible for the analysis.

3.5.1 Data collection procedures

a) Primary data

A pilot study was carried out to pretest the research instruments before the actual administration of the questionnaires. A direct interview with a relevant officer from a representative institution was carried out in order to see whether the questionnaires are appropriate. Other questionnaires were given to 5 more employees to assess the validity of the questionnaires and to evaluate whether they were well understood. After validity was established, the 51 questionnaires were then distributed

accordingly. This enabled getting the required information. These questionnaires were hand delivered and picked.

b) Secondary data

The secondary data was collected from the Kenyan certification firms namely Kenya Bureau of Standards (KBS), SGS (K) Ltd and Bureau Veritas Quality International (BVQI).

3.6 Data analysis

The feedback obtained from the questionnaires was used to gather the data needed for this study. The data was analyzed using frequency tables to show the distribution of certification bodies and ISO management system types adopted by the various selected institutions. Rating factors analysis, descriptive surveys and statistics were used to determine the dominant factors affecting ISO management system implementation and hence continual improvement. The data was also analyzed and presented in tables for easy of understanding.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS & DISCUSSIONS

4.1 Introduction

The study was set out to explore how the prevailing ISO QMS is practiced in selected ISO certified public institutions and find out whether employees of the organizations under study had technical expertise required to operate their respective quality management systems. This study was also to explore further post certification challenges these organizations encounter. The findings after analyzing the collected data indicates fascinating trends and outcomes as will be highlighted in this chapter which consistently draws from the research objectives.

4.2 Response rate

Out of the 51 questionnaires given out to respondents, only 36 of them were returned from 12 institutions.

Table 4.1 Response rate

Gender	Frequency	Percent
Returned	36	70.6
Unreturned	15	29.4
Total	36	100.0

Source: Field Data, 2010

The study was initially set out to cover 17 ISO certified public institutions but due to unforeseen reasons only 12 accepted to participate. 5 of them refused to do so for varying reasons as will explained in the limitations section of this report which was a response rate of 70.6%.

4.3 General Information

4.3.1 Gender

The study sought to establish the gender of the respondents involved in the study. The information obtained from the respondents is as summarized in table 4.2 below

Table 4.2 Gender

Gender	Frequency	Percent
Female	07	20.8
Male	29	79.2
Total	36	100.0

Source: Field Data, 2010

From table 4.2 above, majority of the respondents involved in the study were male representing 79.2% whereas 20.8% were female.

4.3.2 Level of Education

The study sought to establish the respondents' highest level of education completed. The information obtained from the respondents is as summarized in the table below

Table 4.3 Level of Education

Education Level	Frequency	Percent
Degree and above	22	60
College/Diploma	14	40
Total	36	100.0

Source: Field Data, 2010

From the research data in 4.3 above, it was established that majority (60 %) of the respondents had a Degree and above qualification whereas 40 % were college graduates

4.4 Type of ISO Certification

However, after completing collecting data, it emerged that all of them were certified in QMS 9001 and only one was in advanced stages of getting ISO 14001 certification.

4.5 Parameters and Components of QMS for continual improvement

The study sought to establish the extent to which the current and prevailing ISO QMS standard is practised in the organisations on a scale of 1-5 5 = Usually; 4= Several times; 3 = Many times; 2 = Sometimes and 1 =Never. The results are as follows in table:

Table 4.5 Parameters and Components of QMS for continual improvement

DESCRIPTION	N	Descriptive Statistics		Rank
		Mean	Std. Deviation	
Organization's practice in addressing the QMS documentation requirements.	36	4.944	0.236	1
Organization's Management in enforcing QMS and taking a leading role.	36	4.923	0.280	2
Management Resources provision as required by QMS	36	4.892	0.319	3
Rate of management ensuring collection of customer-related data for analysis, in order to obtain information for improvements	36	4.816	0.525	4
Rate of management ensuring collection of data for analysis, in order to obtain information for improvements.	36	3.833	0.4471	5
Rate of the organization in analyzing data to assess its performance and identify areas for improvement.	36	3.692	0.5772	6
Rate of the management using corrective action for evaluating and eliminating recorded problems affecting its performance.	36	3.671	0.5863	7
Rate of the organization in dealing with Product Realization	36	3.692	0.5251	8
Rate of the organization use of self-assessment of the quality management system for improving the overall effectiveness and efficiency of the organization	36	2.611	0.64524	9
Rate of the management using preventive action for loss prevention.	36	2.503	0.6973	10
Rate of the management in ensuring the use of systematic improvement methods and tools to	36	2.615	0.6452	11

improve the organization's performance.				
Rate of the organization in dealing with Measurement, Analysis and Improvement	36	1.424	0.6923	12.

Source: Research Data, 2010

From the research data in 4.5 above the, organization’s practice in addressing the QMS documentation requirements, organization’s Management in enforcing QMS and taking a leading role, management resources provision as required by QMS, rate of management ensuring collection of customer-related data for analysis, in order to obtain information for improvements are practiced (Mean ≥ 4.5 = usually, with a significant standard deviation) in ISO QMS standards implementation in their organization. This is in line with studies done by Stewart (1995) which had noted that for effective implementation of QMS, the management should take leading role in the process

From the same research data the rate of management ensuring collection of data for analysis, in order to obtain information for improvements, rate of the organization in analyzing data to assess its performance and identify areas for improvement, rate of the management using corrective action for evaluating and eliminating recorded problems affecting its performance are practiced several times in the (Mean ≥ 3.5 = several times , with a significant standard deviation) implementation of ISO QMS in their organizations

Rate of the organization use of self-assessment of the quality management system for improving the overall effectiveness and efficiency of the organization, rate of the management using preventive action for loss prevention, rate of the management in ensuring the use of systematic improvement methods and tools to improve the organization's performance in many times (Mean ≥ 2.5 = many times , with a significant standard deviation) are practiced in the implementation of ISO QMS standards in their organizations whereas rate of the organization in dealing with Measurement, Analysis and Improvement is never undertaken(Mean ≥ 2.5 = many times , with a significant standard deviation) in the practice of ISO QMS standards

implementation in organizations. Continual improvement pegging it's emphasis on collection of data from customers for measurement, analysis, and then putting in place systematic improvement mechanism as identified by studies conducted by Omar (1997)

4.6 Technical knowledge

The study sought to establish whether or not the respondents are equipped with necessary knowledge required to run the systems for continual improvement in their organizations. The information obtained from the respondents are summarized in the table below.

Table 4.6: Inadequate technical knowledge of quality management system

DESCRIPTION	N	Descriptive Statistics		Rank
		Mean	Std. Deviation	
Inadequate technical knowledge of quality management system	36	1.658	0.4022	1

Source: Research Data, 2010

From the research data above, majority of the respondents indicated that they have the technical knowledge (Mean ≥ 1.5 = yes, with a significant standard deviation) required for the running of the systems for continual improvement. This responded adequately to specific objective two of which this research was out to find out and the frequency table below indicates the same. Chin et al. (2000) and Low and Omar (1997) findings indicated that Management commitment and employee involvement are top two critical success factors for ISO 9000 maintenance.

4.7 Challenges encountered in Continual Improvement

The study sought to establish the challenges encountered in continual improvement. The respondents were to indicate whether they are challenges or not. The information obtained is as summarized in the table below

Table 4.7 Challenges encountered in Continual Improvement

DESCRIPTION	N	Descriptive Statistics		Rank
		Mean	Std. Deviation	
Low management support in continual improvement	36	1.813	0.4012	1
Lack of availability of funds during the ISO implementation and continual improvement	36	1.752	0.4391	2
Lack of top management commitment to the QMS	36	1.753	0.4392	3
Lack of understanding of the standard requirements	36	1.611	0.4943	4
Lack of fast and quick information transfer between the departments	36	1.693	0.4674	5
Lack of employee commitment to continual improvement	36	1.642	0.4871	6
The documentation requirement as expected by ISO QMS a challenge	36	1.645	0.4873	7
Lack of experience in internal auditing	36	1.643	0.4872	8
Lack of change in people's attitude in continual improvement	36	1.532	0.5063	9
Lack of working culture to embrace continual improvement	36	1.531	0.5063	10
Constraints on human resources in managing the process	36	1.521	0.5074	11
Challenges in precision in documentation and control	36	1.472	0.5065	12

Source: Research Data, 2010

From the research data in 4.7 above the, respondents were of the opinion that ,low management support in continual improvement, lack of availability of funds during the ISO implementation and continual improvement, lack of top management commitment to the QMS, lack of understanding of the standard requirements, lack of

fast and quick information transfer between the departments, lack of employee commitment to continual improvement, the documentation requirement as expected by ISO QMS, lack of experience in internal auditing, lack of change in people's attitude in continual improvement, lack of working culture to embrace continual improvement, constraints on human resources in managing the process and challenges in precision in documentation and control are challenges (Mean ≥ 1.5 = Yes , with a significant standard deviation). Continual improvement can be successful if organization observe their auditing procedures, promote a working culture and ensure participative decision making (Van de Water, 2000; Maina, 2007).

CHAPTER FIVE: SUMMARY, CONCLUSIONS, & RECOMMENDATIONS

5.1 Summary and Conclusions

This study was set out to explore the post certification state of selected public institutions in Kenya for continual improvement and found out that the state corporations under study were operating the QMS 9000 which all were certified in and operating it in a more satisfactory manner.

The study revealed that all of them were certified in QMS 9001 and only one was in advanced stages of getting ISO 14001 certification

In establishing the extent to which the current and prevailing ISO QMS standard is practised in organizations, the study found out that organization's practice in addressing the QMS documentation requirements, organization's Management in enforcing QMS and taking a leading role, management resources provision as required by QMS, rate of management ensuring collection of customer-related data for analysis, in order to obtain information for improvements are practiced (Mean \geq 4.5 = usually, with a significant standard deviation) in ISO QMS standards implementation in their organization. This is in line with studies done by Stewart (1995) which had noted that for effective implementation of QMS, the management should take leading role in the process

Further it was found out that the rate of management ensuring collection of data for analysis, in order to obtain information for improvements, rate of the organization in analyzing data to assess its performance and identify areas for improvement, rate of the management using corrective action for evaluating and eliminating recorded problems affecting its performance are practiced several times in the (Mean \geq 3.5= several times , with a significant standard deviation) implementation of ISO QMS in their organizations

The study revealed that rate of the organization use of self-assessment of the quality management system for improving the overall effectiveness and efficiency of the organization, rate of the management using preventive action for loss prevention, rate of the management in ensuring the use of systematic improvement methods and tools to improve the organization's performance in many times (Mean ≥ 2.5 = many times , with a significant standard deviation) are practiced in the implementation of ISO QMS standards in their organizations whereas rate of the organization in dealing with Measurement, Analysis and Improvement is never undertaken (Mean ≥ 2.5 = many times , with a significant standard deviation) in the practice of ISO QMS standards implementation in organizations. Continual improvement pegging it's emphasis on collection of data from customers for measurement, analysis, and then putting in place systematic improvement mechanism as identified by studies conducted by Omar (1997)

In relation to technical knowledge majority of the respondents indicated that they have the technical knowledge (Mean ≥ 1.5 = Yes, with a significant standard deviation) required for the running of the systems for continual improvement. This responded adequately to specific objective two of which this research was out to find.

The study revealed that low management support in continual improvement, lack of availability of funds during the ISO implementation and continual improvement, lack of top management commitment to the QMS, lack of understanding of the standard requirements, lack of fast and quick information transfer between the departments, lack of employee commitment to continual improvement, the documentation requirement as expected by ISO QMS, lack of experience in internal auditing, lack of change in people's attitude in continual improvement, lack of working culture to embrace continual improvement, constraints on human resources in managing the process and challenges in precision in documentation and control are challenges (Mean ≥ 1.5 = many times , with a significant standard deviation) encountered by organizations in continual improvement.

5.2 Summary of findings

In summary, the findings of the study were

- i) All of the organizations were certified in QMS 9001 and only one was in advanced stages of getting ISO 14001 certification
- ii) Organization's practice the QMS documentation requirements and organization's Management enforce QMS and taking a leading role in effective implementation of QMS.
- iii) Majority of the workers in the organizations have the technical knowledge required for the running of the systems for continual improvement.
- iv) Lack of fast and quick information transfer between the departments, lack of employee commitment to continual improvement are challenges encountered by organizations in continual improvement.

5.3 Limitations and challenges

ISO certification being a new concept in Kenya, there were possibilities of the target respondents with inadequate knowledge on what is required to respond to and how. Additionally, there were several factors intertwined and simultaneously at play, which might affect the validity of any one given factor at a time. To overcome the above limitations, the researcher tried to capture the research questions precisely and sort an introductory letter from the university detailing the purpose of the study to reduce suspicions among the respondents hence increase their response rate.

The study did not come without challenges. These challenges impacted to some extent on the validity of the data collected with some of them being mind boggling. To start with, out of the 17 institutions selected for this study, only 12 of them accepted to participate. The remaining 5 organizations gave varying reasons including the probable consequences some questions posed even though they could not specify, the red tape within those organizations, to inertia of some supposed to be respondents to contribute to knowledge.

As a result the data collected took more time than planned consuming more funds than had been budgeted for and to some extent distorting respondent's response rate impacting on the validity of the data collected. Some respondents were rude, moody,

emotional and uncooperative seeing the exercise as an additional work without returns. Notwithstanding the above challenges the introduction letter obtained from the university explaining that the study was only for academic purposes and not for any other purpose whatsoever was positively received however suspiciously.

5.4 Recommendations and further study areas

Continual improvement is a wide concept with several components and parameters and thus the researcher recommends more studies to be done on more components some of which are as highlighted in the literature review and particularly with regard to several approaches that have been put forth to contribute to this concept.

Additionally, the benefits accruing from operationalization and implementation of various approaches associated with this concept impact greatly on three significant management components namely; quality, cost and time that are essential ingredients and critical success factors for any conventional organization stability, growth and expansion and as a result further studies should be geared towards them to establish their causes and effects on continual improvement.

With the managements' collection of customer related data for analysis in order to obtain information for improvement being a satisfactory rating of 86.1% good, and the rating in measurement, analysis and improvement only rating 50% good, then the researcher would recommend the Quality Compliance and Sustainability departments to engage dedicated staff be deployed towards the sustainability of ISO QMS to ensure that after analysis of data the same is followed up for improvement. Since measurement, analysis and improvement is a major component of continual improvement then this study finds most of the public institutions wanting in this pillar of ISO QMS.

Most organizations strive to be world class through proper implementation and operationalization of standard operating procedures and because the business environment seem to be in a constant state of flux owing to several factors that are dynamic in nature, the researcher recommends regular surveys to see how continual

improvements responds to various dynamic factors at play in the business environment.

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APPENDIX I - QUESTIONNAIRE

<p style="text-align: center;">SUSTAINING CONTINUAL IMPROVEMENT IN ISO CERTIFICATION IN SERVICE INDUSTRY: A CASE OF ISO CERTIFIED PUBLIC INSTITUTIONS IN KENYA</p>

SECTION A: GENERAL INFORMATION AND ORGANISATION PROFILE

SECTION 1:

Please fill in the following questionnaire as accurately as possible. Any information given will be treated with confidentiality and will be used conclusively for the purpose of the research.

1. Gender:

Male [] Female []

2. What is your highest level of education that you have completed?

Primary [] High school [] College []

University []

3. What ISO QMS standard are you certified?

ISO 14000 EMS

ISO 9000 QMS

4. Please provide the name of the Certification body and the date when the last audit took place or when the audit is scheduled to take place.

Certification Body:

Audit Date/Planned Date:

Background of the firm: No. of Staff:

5. State in brief the type of service or product the business supplies, including a brief outline of any specific technical expertise and/or technical processes, which the company possesses.

Section 2:

On a scale of 1-5 5 = usually; 4= Several times; 3 = Many times; 2 = Sometimes & 1 =Never, rate the extent to which the current and prevailing ISO QMS standard is practised in your organisation.

	Questions	Good (4)	Sometime s (3)	Fair (2)	Poor (1)
1	How would you rate the organisation's practise in addressing the QMS documentation requirements?				
2	How would you rate the organisation's Management in enforcing QMS and taking a leading role?				
3	Does the Management provide Resources as required by QMS?				
4	How would you rate the organisation in dealing with Product Realisation?				
5	How would you rate the organisation in dealing with Measurement, Analysis and Improvement?				
6	How would you rate management ensuring collection of customer-related data for analysis, in order to obtain information for improvements?				
7	How would you rate management ensuring collection of data for analysis, in order to obtain information for improvements?				
8	How would you rate the organization use of self-assessment of the quality management system for improving the overall effectiveness and efficiency of the organization?				
9	How would you rate the organization in analysing data to assess its performance and identify areas for improvement?				
10	How would you rate the management using corrective action for evaluating and eliminating recorded problems affecting its performance?				
11	How would you rate the management using preventive action for loss prevention?				
12	How would you rate the management in ensuring the use of systematic improvement methods and tools to improve the organization's performance?				

Section 3:

Does your organisation experience the below challenges during continual improvement.

Tick where appropriate.

1. Lack of employee commitment in continual improvement? Yes or No
2. Lack of change in people's attitude in continual improvement? Yes or No
3. Lack of working culture to embrace continual improvement? Yes or No
4. Lack of fast and quick information transfer between the departments?
Yes or No
5. Low management support in continual improvement? Yes or No
6. Lack of availability of funds during the ISO implementation and continual improvement? Yes or No
7. Do you find the documentation requirement as expected by ISO QMS a challenge? Yes or No
8. Inadequate technical knowledge of quality management? Yes or No
9. A lack of knowledge of formalized systems? Yes or No
10. Lack of experience in internal auditing. Yes or No
11. Constraints on human resources in managing the process? Yes or No
12. Lack of top management commitment to the QMS? Yes or No
13. Lack of understanding of the standards requirements? Yes or No
14. Challenges in precision in documentation and control? Yes or No

APPENDIX II – LIST OF RESPONDENTS

No.	Public Institution	Year of certification
1.	University of Nairobi	2008
2	Kenyatta University	2008
3	Jomo Kenyatta University College of Agriculture and Technology (JKUCAT)	2008
4	Kenya Institute of Administration	2008
5	The Kenya Institute of Education	2007
6	Kenyatta International Conference Centre	2007
7	Retirement Benefit Authority	2007
8	Kenyatta International Airport	2008
9	Kenya Airport Authority	2008
10	Kenya Revenue Authority	1997
11	Kenya Medical Training College	2008
12	KPLC	2008
13	Kenya Wildlife Service	2007
14	The Water Services Regulatory Board (WASREB)	2008
15	Kenya Tea Development Authority (KTDA)	2009
16	National Oil Corporation	2009
17	Kengen	2008