

**Regional Eastern Africa Unistaff Alumni Network
Conference and Workshop – 6th to 10th November
Kenyatta University**

**ISSUES AND CHALLENGES IN IMPLEMENTING QUALITY ASSURANCE IN
HIGHER EDUCATION – STRATHMORE UNIVERSITY CASE**

Mrs C N Muchira Gatei, Dr Joseph Sevilla

Mrs C N Muchira Gatei is Quality Assurance and Records Manager and Dr J Sevilla is DVC - Research and Quality Assurance at Strathmore University, Ole Sangale Road, Madaraka Estate, P O Box 59857 00200 City Square, Tel: 606155, Fax: 607498, Website: www.strathmore.edu

ABSTRACT

This paper deals with the issues and challenges facing the successful implementation of a QMS in an educational institution, namely, Strathmore University. It looks at the various steps followed to implement QMS in the University.

Strathmore University (SU) decided to implement a quality assurance system in early 2003 to ensure excellence in the pursuit of its objectives. In the development of her strategic plan, the University identified the need to institute a QMS to ensure adherence to quality along the expansion path. It was a means of entrenching a systematic approach to quality management in both its administrative and academic functions. Ideally, the QMS should guarantee adherence to the University's processes and procedures.

The process of QMS entails various steps including the decision to implement quality assurance, making of quality related choices, educating staff, constituting the implementation team, defining statements, policies and processes, documentation, internal audit training and the audit process, certification and QMS monitoring and growth. The paper discusses the various challenges encountered in the steps of the QMS process. It further looks at positive and negative aspects of each step as well as the measures taken to overcome them.

In conclusion, an understanding of the issues and challenges at each step of QMS implementations allows for suitable preventive and correcting actions to achieve optimal performance over time. Our conclusion would be of high interest to other local and regional universities who have decided to implement a QMS.

INTRODUCTION

Strathmore University management decided to implement a quality assurance system in early 2003 to ensure and improve in excellence as it pursued its objectives. Strathmore was in the early stages of developing into a University and had plans to become a leading outcome driven entrepreneurial university in the region. Strathmore planned to offer world class and accessible high quality university education and training in the areas of ICT, business administration and management, hospitality management, entrepreneurship and enterprise development (Strathmore University, 2006). A decision to implement a Quality Management System was made and the process began.

Quality Assurance is defined by the “International Organisation for Standardisation” (Kenya Bureau of Standards, 2000) as part of quality management system (QMS) focused on providing confidence that quality requirements will be fulfilled. An effective quality assurance system will have product and service quality conformance as its primary goal (Heras et al, 2002). Quality assurance reflects the actions taken to ensure that standards and procedures are adhered to and that delivered products and services meet optimal performance requirements. It is further stated that a QMS that is designed to continually improve performance while addressing the needs of all interested parties will use the eight quality management principles. These are customer focus, leadership, involvement of people, process approach, systematic approach to management, continual improvement, factual approach to decision making and mutually beneficial supplier relationships. An educational institution like Strathmore University would ensure that the services it provides meet the needs and expectations of its customers, that there is a focus on continuous improvement and that the system inspires confidence in both customers and management that quality objectives are met.

QMS IMPLEMENTATION

The process of QMS entails various steps. Strathmore University took the following path to implement quality assurance in the University. Some of the activities were carried out concurrently or overlapped.

- Decision to Implement Quality Assurance
- Choice of Certification Body
- Education of Staff on QMS
- Implementation Team
- Defining Scope and Statements
- Documentation
- Audit process
- Monitoring and growth of the University QMS

The first 4 steps were carried out by University management. The rest were carried out by the ISO Implementation Steering Committee.

Each step presented various issues that had to be resolved and also challenges that had to be overcome. There were also positive and negative aspects output of each step.

Decision to Implement Quality Assurance

The idea to implement quality assurance was conceived by the University’s Management Board (MB) as early as 2001 though implementation did not start until 2003. MB was aware that the process was resource intensive in terms of time, money and people. They were not though fully aware of exactly what the proposal would translate to once on the ground. The fact is that QMS is a continuous process that requires continuous inputs.

The reasons for implementing a QMS and attaining ISO certification can be one and the same – quality assurance which ultimately points to customer focus. The study by Terziovski (Terziovski et al, 2003) concluded that the individual element found to contribute most to business performance was Customer Focus.

A review on research previously carried out led Dick (Dick, 2000) to conclude that there is no proven link between quality certification (ISO 9000) and improved business performance. However, it was clear from the research reviewed on business performance factors, that better

quality does have a consistent, positive relationship with business performance. Strathmore University therefore could have implemented a QMS without certification and still reaped benefits on performance.

Various factors led to the MB decision to implement quality assurance. Firstly, Strathmore had plans to expand and implementing a form of quality assurance before the planned growth, was seen as a way to ensure that quality was maintained as expansion occurred. It was a means of entrenching a systematic approach to quality management in both its administrative and academic functions.

Secondly, the QMS would provide assurance to management and the University's customers that the systems it had in place were working well.

Thirdly, in 2002 the University received funds through the Technical Education Support Programme (TESP) under the Seventh European Development Fund, the Commission of the European Communities (EC) and the Government of Kenya (GOK). TESP was specifically designed to "establish a sustainable, quality driven and demand oriented human resource development base, which can adequately match Kenya's development requirements" (Grant Contract for a Decentralised Programme – European Community External Aid: Support to Strathmore College Annex 1). The University was to train all members of staff to ensure more efficient operation and an improvement on the quality of services they provided. The proposed way to achieve this target was by developing procedures and organising training for the University staff. The result was expected to bear directly on the quality of teaching and to provide job satisfaction. (Grant Contract for a Decentralised Programme – European Community External Aid : Support to Strathmore College Page 2). Under the support given to Strathmore, the University was to attain ISO 9000 certification as a structured way to achieve its quality objectives.

Terziovski (Terziovski et al, 2003) found that that there is a significant and positive relationship between the manager's motives for adopting ISO 9000 certification and business performance. Those organisations that pursue certification willingly and positively across a broad spread of objectives are more likely to report improved organisational performance. This infers that the reason for seeking certification is an important signal for future performance of the organisation. Jones (Jones et al, 1997) too found evidence that firms that sought quality certification because of externally imposed perceptions on the necessity to "obtain a certificate" were found to experience fewer beneficial outcomes of certification than firms that had a "developmental" view of quality improvement.

Issues that occurred during this stage of the implementation were varied. Of prime importance was management commitment and the "perpetuity" of the system. This was focused primarily on monetary issues. Of course funds were available for the implementation and certification process in the form of the grant the University received. This though would only enable the University to implement a QMS and achieve ISO certification within one year. The MB would then be required to maintain the QMS and the certification providing the necessary budgetary allocation.

Management commitment requires that there should be a champion of the system from top management who would set in motion and drive the process. In Strathmore, the then Principal was the sponsor of the system and actively monitored progress.

Another aspect of importance to the MB was that Strathmore University would be the first University if not the first educational institution in the region to implement a certifiable QMS.

Expertise in the region was therefore lacking and there would be no one to “consult”. It would be a challenge but they felt they would be up to it.

The limited time frame to implement the QMS and attain certification was also a challenge presented to MB. They would have to get a team on the ground and get it working immediately to achieve the ISO certification within a year.

Choice of Certification Body

Once the decision to implement a QMS was reached, the next decision required to be made was how the implementation would be conducted. It was decided that MB fact find on the various certification organisations in the region. A number of them were contacted and information received from them. After review of this information, it was clear that management need to be educated on what the whole process entailed. One organisation was ready to give management briefing sessions at a reasonable rate and they were selected – this was the Kenya Bureau of Standards (KEBS).

After the conclusion of the first internal audits (carrying out the required corrective actions) an application for certification with the required documentation for the University’s QMS was made to KEBS. The initial certification audit required a review of Strathmore’s Quality Manual and an actual audit conducted at the University’s premises.

It may seem that KEBS having conducted the education of Strathmore staff on QMS could not also be the certifying body. While KEBS did train staff, the implementation of the QMS was done by the University staff themselves. KEBS was not involved in defining the scope or creating the required documentation for the system at all; therefore they did not have a stake in the success of the system. The standard that KEBS is accredited to (ISO 17021) states that arranging and participating in training is not considered consultancy. This is providing that the training if it relates to management systems or auditing is confined to the provision of generic information; i.e. provided the trainer does not provide company-specific solutions. It is acceptable for KEBS to be involved in training so long as the training involves the provision of information that is freely available in the public domain.

Education of Staff on QMS

Strathmore has always enjoyed a good reputation for performance in the region and has grown a culture of excellence. Heras (Heras et al., 2002. 1) found that organisations with superior performance were more likely to have certification. The existing culture of excellence in the University was what was required to be turned into a culture of quality. The various types of education on QMS conducted in the University to facilitate for this and the implementation of the QMS were:

- Management Board briefing. This was meant to introduce to MB the implications of a QMS on the organisation and to facilitate for a plan on the way forward.
- Management Awareness Training for ISO 9001 which created QMS awareness to top and middle management.
- Implementing ISO 9001:2000 and procedure writing to introduce middle management training to the requirements of the standard, development of necessary documentation.
- Auditor training.
 - Internal Auditing of Quality Systems according to ISO 19011:2001 against ISO 9001:2000 so as to have personnel qualify in internal quality system audit so that

the implementation of the QMS may be audited as required by the ISO 9001:2000 standard.

- Lead Auditors course which allows participants to sharpen their auditing skills, exchange ideas on best auditing practice and gain further qualifications in auditing.

The aim of the decision to implement a QMS was not clearly communicated to SU staff. There was created an impression during the staff sensitisation and education that the ISO certification and not a QMS was the key goal. This led to initial misconception in the staffs' minds on the aim of the SU QMS. To this day, staff will often refer to the "ISO system" and not the QMS.

Availability of staff for training was another key issue that was encountered at this point. This was resolved by conducting the sensitisation and education exercises where possible in groups – each department would send half its people for one session and the other half to a repeat session. In this way, normal operations of the University were not disrupted. The cadre of people who were trained at that time were operators, supervisors, middle and top management.

A point that was examined was who would be the participants of the specialised training. Not everyone had the qualities required or was qualified for example to attend internal auditor training; and even then, only a certain number were required. The internal auditor also has to be examined to be certified as an auditor and capable people had to be selected to attend the training.

Implementation Team

The ISO Steering Committee was composed of the chairperson who was a member of MB, the deputy chairperson, the project manager and members who represented all the University departments. The project manager had previous experience in quality assurance implementation. The committee was mandated to start the implementation of QMS process by studying the current system, making the required adjustments, developing the documentation and ultimately attain the certification. The team members all had an understanding of QMS and of the ISO 9001:2000 standard.

The team held working sessions twice a month which required brainstorming, questions and answer sessions, research and feedback. Targets were set and progress reports presented on percentage of completed work done. Team members also would be assigned tasks as and when required.

Time was of the essence. The QMS had to be up and running and ISO certification attained within a year. Adequate time had to be given to the team members to carry out their tasks and, at the same time, an eye had to be kept on the clock. The committee determined that two weeks was an acceptable time frame to carry out a task and thus the meetings were held every two weeks. At the meetings the team members were expected to have completed the task or provide sufficient reason not to have done so.

The implementation team members continued with their current work and would take on the QMS implementation as an additional duty. Efficiency and task management were required to so as to complete the tasks assigned on time

Reporting on status was done as a percentage of the total task by team members doing the work. This required full knowledge of the involvement of the task which was not always the case, plus a certain measure of subjectivity occurred. Several times the status of tasks would move from perhaps 70 % complete in one meeting to 50% complete in the next meeting two weeks later.

The ISO Steering Committee fulfilled its mandate and carried out the implementation of the QMS. The SU Quality Manual was available at every point of use in the University and the ISO certification had been attained. The handover from this implementation team to a running committee was delayed. There was though never any doubt within management that they would continue running the system. The delay in handover resulted from the “fatigue” induced by the certification run, and also resulted from a “misunderstanding” of what is involved in the QMS’s survival let alone growth. This lapse resulted in reinforcing in the University staff’s minds that the aim of the whole process had been to attain ISO certification only. It has been and continues to be task to change this mind-set.

Defining Scope and Statements

Defining scope and statements required stating the vision, mission, policies, processes, structure of the University. SU decided that all the processes apart from the Chaplaincy would be under the scope of the QMS. The majority of SU statements already existed, but some had not been documented and displayed. This was a time for the statements to be examined and evaluated to see if they were in line with the needs of a growing institution. An organisational structure was documented showing responsibilities, authorities, relationships and processes. The administrative structure showing the positions in the organisation was also documented.

The production of the large charts that defined the University structures and creating departmental statements is an ongoing process. This is especially because SU is a growing institution – the number of units in the QMS has grown from the initial 8 in 2003 to 33 in 2006. New departments are set up every so often and have to write their documentation to a level that can allow them to be audited.

Documentation

The ISO Steering Committee was required to develop the documentation for the QMS. This meant writing down and stating clearly and concisely what each process involves. It was a simple though tedious exercise. Documentation required a lot of team work, consultation and debating within the team and also within the departments defined in the scope.

The implementation team member from each department acted as liaison between the team and the department. It was the responsibility of the team member from that department to guide the department on how to do the documentation. Each process was written out by the person or persons in the department who performed it, and then it was reviewed by a colleague who understood the process. The implementation team member of each department then compiled the various “write-ups” into procedures, resulting in documentation for the processes. SU was only documenting up to procedure level across the whole University and only very few departments would go lower down to work instructions detailing how each task was performed.

An innovative approach was also taken on the presentation of the quality manual in the University. The manual is online with various controls set in place regarding access and update. This allows for ease of update and also distribution and availability of the manual to all staff in the University – there are over 250 computers in the University dedicated to administrative duties. Downloads and printouts are also possible as and when required. Though the idea of the

manual on the intranet is good, the design is still very basic and rudimentary and plans are underway to improve it to allow for ease of navigation.

We started by documenting what was in existence, that is the processes that were in operation. Recently, there have been many changes in the University arising from the creation of new courses, departments and systems (academic and library systems). With these changes occurring there is a question on what and how soon to document. New departments are given a certain period within which to document their processes. An ideal situation would be that all the procedures were in place before the department starts working, but this is not practical since many of the processes are created as work is begun.

Implementation of new systems is creating changes in the “how” of processes. The “what” (the outcome) is still the same. Documentation deals with the “how”. The question now asked is - does one document the current situation, or the situation as it will be in a while after the changes? What should one do – especially with upcoming audits and the possibility of a great number of nonconformances? Should one document “what if” scenarios instead of “what is”. SU though has maintained a “what is” approach to documentation, with new departments negotiating for acceptable time lines to carry it out to allow for the changes.

Another issue that is of importance when documenting is to remember that procedures are not written in stone. Processes change – and thus the procedures should change. Better ways of doing things are discovered – the procedure is improved upon. Documentation should change to accommodate improvement of processes. Procedures should not tie staff down to performing tasks just because it has been written down. Strathmore has been careful not to let documentation become a hindrance to innovation and change for the better.

There is also the risk of ‘locking in’ or systematising some poor practices through the certification process (Terziovski et al, 2003), or rather the documentation process. If the process is wrong, documenting it, does not guarantee quality. Ultimately, delivery of quality services effectively and efficiently should be the aim of the QMS. Departmental reviews were conducted by each department to ensure that what was “locked in” was the right way of performing the processes.

Audit process

Strathmore currently undergoes four audits a year. Two of the audits are internal audits and the other two are external surveillance audits. The internal audits, conducted by internal auditors are primarily used to check on the improvements that have been implemented to the QMS. The external audits conducted by our certification body KEBS monitor if the University still deserves to maintain its certification. Our QMS Annual Schedule allows us to schedule all the activities including the audits. Over time, we hope that we will be able to reduce the number of audits as our QMS matures.

Internal audits are usually carried out and corrective actions completed before the surveillance audits. In a survey of 274 quality auditors in the UK, Williamson (Williamson et al, 1996) found evidence of implementation of corrective actions as providing the strongest indicator of an effective quality system. Russell (Russell and Regal, 1996) also place great emphasis on this area of the audit process, stating that they believe that the key to effective auditing lies in the phase between audit performance and the following through on the results of the audit. Carrying out corrective actions in Strathmore inspires confidence in departments that their processes are working well. . This ensures good surveillance audits results.

Auditees will usually carry out a corrective action within a month of the request. There have been instances when auditees have claimed workload as a reason for their inability to carry out corrective actions within a month. The QMS recognises that this is true since all staff do have their primary duties; nonetheless we have re-iterated that if corrective actions are not carried out, that would mean that the auditee perpetuates the nonconformance which will have a negative effect on quality.

There are corrective action requests that cut across departments, or involve another department. The question has always been and still remains – who will carry out the corrective action request? Sometimes the departments that were not directly in the audit schedule will refuse to own the corrective action request. In these cases the Quality Management Representative (QMR) takes responsibility of the corrective action and negotiates with the relevant departments for its resolution.

The number of corrective action requests arising from internal audits are quite high compared to the number of corrective action requests from external audits (ref Table 1). The internal auditor team, usually made up of two, will be assigned a department to audit. They are very thorough, preparing very well in advance and will usually take a morning to audit documentation and processes in the department. The internal auditors being Strathmore staff are also very conversant with the system and will know how processes run and what is not being done. This gives them an added advantage while auditing allows them to find the nonconformances easily. Hutchins (Hutchins, 1993) claims that quality auditors frequently are unfamiliar with the client’s industry, quality system, and process or products/ services inevitably resulting in a poor quality audit.

**Table 1: Internal and External Audit Findings (2003 – 2006)
Average number of nonconformances per department**

	Major	Minor	Observations	Date
Internal Audits	1.58	1.25	0.75	March-06
	2.00	2.28	0.39	October-06
	2.42	2.92	0.75	April-05
	2.00	3.00	0.50	October-04
Surveillance Audits	0.38	0.50	0.88	June-06
	-	0.43	1.14	January-06
	0.20	0.80	1.00	June-05
	0.73	-	0.64	November-04
	0.13	0.53	0.47	November-03

Terziovski (Terziovski et al, 2002), states that conformance auditing has a role in the early stages of quality systems implementation. This has been implemented in the University by using audits to ensure that the aspects of the QMS introduced for improvement are being adhered to. It requires that the focus of audits is defined before each audit. We have focused on the following aspects in past audits: documentation, records management, customer communication and also effectiveness of processes.

Initially the aim of audits was not clearly understood by staff. After some time staff are now realising that the aim of the audit is not to see what mistakes are made – it is to improve how we

do what we do. The number of complaints from staff resulting from audits has reduced, and acceptance of nonconformances is straightforward.

Another aspect that has aided the University QMS is that internal auditors are staff member themselves. When preparing and or auditing, they notice nonconformances in the departments other than their own. This raises in them awareness to “nonconformances” and results in them conducting self audits and carrying out corrective actions.

To begin with, internal auditing was a daunting experience for the auditors. Their inexperience led to audits not being conducted very well with nonconformances being clumsily stated and corrective actions to carry out being unclear to auditees. Carrying out a number of audits over time and refresher training has resulted in an increase in expertise and auditing skills. As a result, the quality of audit has improved over time.

Conflict with other duties has also been a great hindrance to carrying out of audits especially over time as the University has grown and workloads have increased. Different schedules have been difficult to synchronise. Often, rescheduling of audits is required as long as the audits are carried out within a reasonable time of the stated dates.

As in all audits, internal or external, personalities have to taken into consideration when setting up the audit team and when linking audit teams to audit departments. This is a critical step since audits can fail if sever personality clashes do occur. A failed audit is not a plus mark for the QMS, so care has been taken to ensure that audit teams and departments are well matched.

KEBS conducts surveillance audits for the University. Arranging for the audits to be carried according to our schedule presents a hurdle since the KEBS also has its own schedules, but so far we have managed to get our audits conducted on time.

Monitoring and Growth of the University QMS

One of the underlying principles of a QMS is continuous improvement (Kenya Bureau of Standards, 2000). This requires that the system is monitored, evaluated and changes implemented. The QMS in SU has not only grown in size but also in its own “quality”. Terziovski (Terziovski et al., 2003) suggests that, ideally, organizations should set themselves quality standards well above the minimum prescribed by ISO 9000 standards, and constantly seek ways to improve all facets of the operation.

The QMS has strived to be an integrated part of the system so that it does not sit apart from the regular schedule. Activities of the QMS are scheduled into the University calendar. Various activities in the university are planned to highlight and create awareness of quality. These include the Quality Day, the Quality Prize and Quality Red Flagging. The first Quality Day was held on 20th September 2006 and will be an annual event. A specific quality theme will be selected annually. Various activities geared towards the theme are carried out. The Quality Prize – given to the best department – is built on the QMS merits and demerits process. This process rewards actions that promote quality and penalises quality violations in the University. The Quality Red Flagging is the physical reminder of quality violations and requires the department concerned to carry out “quality” actions to redeem itself.

The QMS has been used as a vehicle to implement various other aspects of work in the University. The procedures are used in the induction process by the human resource department. The results of the customer communication process (customer surveys) are taken into consideration when departments are planning and setting performance goals. The quality

manual has been used as a framework to hold policies and guidelines, for example, the teaching and learning quality assurance guidelines. This is a positive use of the QMS but it has resulted in raising questions on the role QMS. It has led for example to confusion with some aspects of performance management. We still need to eradicate the misconception that the QMS (through the QMR) is supposed to monitor what staff are doing.

A great challenge at this point is to totally integrate the QMS into the everyday working life at the University, and not to see it as a separate entity. We have had cases where tasks related to the QMS were seen as an intrusion to work, especially for auditing, and staff would be reluctant to perform some duties. The overall result though is that the QMS has had an impact in the University and is appreciated by most. In a survey conducted in August 2006, 100% of staff responded that the University QMS had improved on their work procedures (ref Table 2).

Table 2: Impact of QMS on SU Summary Survey Results (August 2006)		
		Yes
1	Are you aware of Strathmore's Quality Management System (QMS)?	100%
2	Are you aware that Strathmore University attained ISO 9001:2000 certification?	100%
3	Have you noticed any mark showing the certification?	80%
4	Are you aware of Strathmore's Quality Policy?	98%
5	Do the notices on the University's quality policy and mission statement hold any interest to you?	100%
6	Does ISO 9001:2000 certification still hold any interest to you?	88%
7	Overall, has the Strathmore University QMS improved your work procedures?	100%

Overseeing this integration and the growth of quality has been the responsibility of the Quality Committee. This committee is headed by the Quality Management Representative (QMR) who also doubles as the Quality Manager of the University. The committee works to ensure that quality is maintained in the University and coordinates quality activities during the year like audits and the Quality Day.

Another step that has been taken to ensure that the QMS is actively running in the University is the appointment of QMS Departmental Representatives – QMS Reps. These are members of staff in each department who are charged with maintaining their departmental quality issues – procedures, audit issues and implementing improvements. They also represent their department in the QMS Departmental Representative meetings and participate in the making of quality related decisions in the University.

The human resource department has integrated quality issues as part of the both administrative and teaching staff seminars. Topics related to the theme of the seminar and linked to quality are discussed. This serves two purposes: there is continued education on our QMS and staff give feedback their understanding and implementation of the QMS.

A feeling of “saturation of quality” in the organisation has also occurred from time to time. This is primarily because of the many related activities and request to staff to perform tasks related to

the QMS. These activities range from participating in audits and even to simple tasks like reformatting of our documentation. A commonly asked question is -when does this end? The commonly given answer is – when we are perfect. Underlying this response is the well known fact that no one is perfect. Strathmore University is not perfect either.

Many aspects of the QMS still need to be improved, for example the internal academic quality audit. Audit strategies and methodologies to support this self regulation should be developed to support Strathmore's unique purposes and objectives. Strathmore University already has *Guide to Quality Assurance of Teaching and Learning* and implementation is underway via the Teaching and Learning Committee. The academic quality audit should facilitate evaluation of performance of quality assurance and quality control systems and procedures and ensure that schools/departments/service units are duly accountable for the quality and standards of their work; improve the institution's ability to prioritize issues and facilitate decision making; enable the institution to respond better to the expectations and requirements of internal and external quality audits (Jackson, 1996).

Conclusion

We have explained in detail the issues and challenges of implementing a QMS in Strathmore University. An understanding of the factors encountered at each step of SU QMS implementation will allow for suitable preventive and correcting actions to achieve optimal performance over time.

Our experience has both positive achievement and negative aspects that have been corrected and continue to be. They can serve as a useful reference to other universities in the region which may be considering the implementation of a QMS.

References

Dick G. P. M. (2000) ISO 9000 certification benefits, reality or myth?, *The TQM Magazine*.

Grant Contract for a Decentralised Programme – European Community External Aid: Support to Strathmore College

Heras I., Casadesús M., Dick G. P. M. (2002) ISO 9000 certification and the bottom line: a comparative study of the profitability of Basque region companies, *Managerial Auditing Journal*. Volume 17, Number 1/2, pp. 72-78.

Heras I., Dick G. P. M., Casadesús M. (2002. 1) ISO 9000 registration's impact on sales and profitability- A longitudinal analysis of performance before and after accreditation, *International Journal of Quality & Reliability Management*. Volume 19, pp. 774-791.

Hutchins G. (1993) ISO 9000: A comprehensive guide to registration, audit guidelines and successful certification, *Oliver Wight Publications Inc*.

International Organisation for Standards, ISO/IEC 17021 - General requirements for bodies operating assessment and certification/registration of quality systems, clause 3.3.

Jackson N. (1996) Internal academic quality audit in UK higher education: part I - current practice and conceptual frameworks, *Quality Assurance in Education*. Volume 4, Number 4, pp. 37-46, MCB University Press.

Kenya Bureau of Standards (2000) KS ISO 9000:2000 Quality Management Systems – Fundamentals and Vocabulary, *Kenya Bureau Standards*. Clause 0.2 and 3.2.11.

Kenya Bureau of Standards (2000) KS ISO 9001:2000 Quality Management Systems – Requirements, *Kenya Bureau Standards*.

Russell J. P., Regel T.(1996), After the Quality Audit: Closing the Loop on the Audit Process, Reviewed in *Quality Progress* 29(6). pp66.

Strathmore University (2006), Strathmore University Quality Manual, (<http://sagana/qms>)

Terziovski M., Power D., Sohal A. S. (2002) From Conformance to Performance and Continuous Improvement using the ISO 9000 Quality System Standard, *International Journal of Business Performance Management*.

Terziovski, M., Power, D, Sohal A. S. (2003) The Longitudinal Effects of the ISO 9000 Certification on Business Performance, *European Journal of Operational Research*.

Williamson A., Rogerson J. H., Vella A. D. (1996) Quality systems auditors' attitudes and methods, a survey, *International Journal of Quality Reliability and Management*,. Volume 13, No 8, pp.39 -52