



## Preparation of QMS Manual and its Implementation - A Case Study

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### ABSTRACT

ISO standards of 9000 family assist in designing and implementing quality management system in an organization. QMS increases the efficiency and effectiveness of organization's ability to meet customer, statutory and regulatory requirements applicable to the product and the organizations own requirements. It also helps in systematic planning, organizing, monitoring and verifying of the process thus reducing needless capital, increasing productivity, ensuring quality in process & product.

In this thesis a quality management system manual and the necessary formats are prepared for a company which is not ISO certified, taking them a step closer to certification process. The manual is prepared as per the requirement of ISO 9001.2008 standard and the company's scope. ISO 9001.2008 and ISO 9000.2005 standards were referred for the preparation of the manual, where ISO 9000 states the fundamentals and vocabulary of QMS and ISO 9001 states the requirements in quality management system. ISO 9001 is the only certifying standard in ISO 9000 family. These standard guides the organization in implementing, maintaining, monitoring, improving QMS to meet the customer, statutory & regulatory requirements. Via visiting the organization, understanding the organizations scope of work, process and procedures adopted in the firm, collecting the required documents & data and integrating these process, procedures and formats a Quality manual is prepared. By implementing the manual, adopting the procedures and documenting the process and progress the performance of the organization can be improved. If interested the organization can go ahead with certification process after fully implementing ISO process.

**Keywords--** QMS, ISO Standard, Quality Management

requirements. It is achieved by documenting the standard procedures and documentation of processes involved. It improves the core / critical process and increases customer satisfaction thus improving the business performance and elevating employer's confidence. It also indirectly helps to decrease cost & wastage from rework due to systematic planning, review and inspection

ISO 9000 explains the fundamentals & vocabulary of QMS used in ISO 9000 family. It states and explains the fundamental principles and the benefit involved in adopting it. These principals help to keep up with the demanding market. The quality management principals are given below

Customer satisfaction - Aim to not only understand and meet the customer satisfaction & collect their feedback but also try to go beyond their expectation.

1. Leadership - Establish a common aim and motivate the team to achieve it.
2. Participation of individuals - Ensure people at every level are involved and accountable to the task assigned.
3. Process approach - Identifying and monitoring the core activities in achieving better quality of products
4. System approach - Identifying, monitoring & managing interconnected activities for improving the effectiveness and efficiency.
5. Improvement - Firm must always try to excel its capabilities & performance.
6. Decision making - The decision should be made on the basis of analyzed data & records and from practical experiences.
7. Relationship management - The supplier should be chosen in long and short term relation, having a reasonable and quality product. The company and supplier should collaborate on improvement by share the information, expertise and suggestion for mutual benefits.

### I. INTRODUCTION

QMS is a method of organizing and logically systemizing sequence of activities & processes such that there quality can be observed, measured, validated and improved. QMS addresses the methods for meeting and improving statutory, regulatory and customer

## II. LITERATURE REVIEW

**1. Dr. Daw Alwerfalli, Dr. Aslihan Karatas & Muteb Alshammari** in their paper entitled "*Application of Quality Management Systems (QMS) in Construction Industry*" briefly explained about QMS, its importance & purpose. They have mentioned the elements or areas to be included in system approach of QMS & briefly explained the process, documentation involved including the process for any non-conformities. They showed the comparison of ISO 9001 to the latest ISO standard of 9001:2015 and discussed the significance of ISO standard.

**2. Sepani Senaratne & Jeevana Mayuran** in their paper entitled "*Documentation Management based on ISO for Construction Industries in developing countries*" started off with findings from various literature of the benefits and problems of documentations. With the help of a questionnaire a survey was carried out in Colombo, Sri Lanka for 1 grade ISO certified contractors, asking them to rank the degree of implementation & documentation currently adopted in site and the reason for no documentation and their suggestion. From analysis of the survey it was noted that the documentation involving communication with clients & site in charge along with work process instructions where ranked high. The key reason for no proper documentation management system was lack of interest, high initial cost and need for training, less staff and time. To overcome the stated some of the suggestions were to organize workshop, promote awareness, document only main process and make it simple & easy, to document certain process in hard copies and to conduct regular inspections. Thus the generic problems faced and suggestions were obtained.

**3. George Guchu & Zsumbah Mwanaongoro** in their paper titled "*ISO Quality Management Implementation for Small to Medium Manufacturing Firms Kenya*" mentions different codes, their uses and the advantages of certification. They had proposed the subsequent strategies for implementing QMS. They started with allotting a QMS team of 2 to 3 members consisting of an MR & an assistant to implement, maintain and promote QMS and also a calibrating team to calibrate all equipment's including contractors. Then a manual consisting of various procedures, their interactions & flowcharts, quality policy & objective for each department, audit procedures, formats, roles, responsibility & authority were drafted. For reviewing QMS, adequacy and compliance audit were conducted. They also discussed the factors considered in selection of the certifying body and the necessities for registering, i.e., minimum of 3 to 6 audits and 2 MRM. They have also give details regarding which data, from which document's to be analyzed for continual improvement.

**4. Behnam Neyestani** in her paper "*Effectiveness of Quality Management System (QMS) on Construction Projects*" stated the significance of implementation of QMS and evaluated the effect of the implemented QMS in Metro construction in Manila, Philippines by

conducting questionnaire on 37 managers. It was found that by implementing QMS, customer satisfaction was mostly improved as their main focus was in meeting the customer requirements in their process approach. It was noted that QMS also affected the time & cost and the quality, scope had the least impact. Implementing QMS had improved the overall execution of the project as a whole.

## III. RESEARCH METHODOLOGY

With reference to ISO requirement stated in ISO 9001:2008 the quality manual for the company was prepared. ISO 9000:2005 of fundamentals & vocabulary of QMS, containing the fundamental principles of QMS was also referred for better understanding of QMS concept.

- The manual was prepared for 'Tellus spaces', a construction company which is not ISO certified.
- The basic information about the organization was collected from the HR.
- The organization chart was outlined.
- The quality policy & measurable quality objective was discussed with the MD/ proprietor and the admin and arrived at.
- The intention of the manual is to have a documented processes and formats for reference was stated in it.
- After discussion with the top management, project manager, site engineer & observation of the ongoing process, after incorporation of the changes and improvement suggested the procedure of various activities were documented as standard procedures.
- All the documents draft was prepared and shown to managing director for review & all the suggestion provided and changes mentioned where incorporated in the manual. The formats which were not present in the site were prepared anew.
- The manual is written with the revision number & revision date on every page for easier and faster retrieval and identification and also to prevent non-conformance during audit. Each point is numbered for faster and precise identification during review, improvement & implementation of changes.
- The auditing notes, non-conformance report and the corrective action & preventive action formats are formed. The procedure of documentation, identification, verification and acceptance of required action are explained.
- The procedure of acceptance and verification of outsourced activities is also explained.
- The procedure of controlling calibration of equipment's including the contractors is briefed.

- The course of writing, maintaining records are also explained. All records must contain the date of production and the name of creator and must be verified before issue.

#### IV. RESULT AND CALCULATION

A Case study was carried on the project 'Tellus Spaces', which is intended as commercial building for office spaces.

The manual was used as a reference document. It helps the employers of the organization understand the interaction of the sequence of activities & processes so they can be at par with the system adopted and can achieve the goal efficiently and effectively. The organization started with implementation of project time documentation, since the current ongoing project is delayed due to repeated change of the contractors. Some of the implemented documents are attached below.

Due to shortage and repeated change of staff, increased work load, shortage in time, lack of motivation the documentation of work was resisted. The incomplete and absence of documentation was mainly due to lack of interest, resistance to change and lack of knowledge of ISO process benefits

The staff can be made aware of the significance & benefits of QMS and ISO process by conducting workshop. Explaining the importance and process of documentation either as softcopy or as hardcopy. Interest and involvement of staff towards implementing, maintaining & improving QMS should be appreciated and rewarded for the hard work as motivation.

The firm can go ahead with the certification process after implementing and meeting rest of the requirement i.e., conducting minimum of three audits with the result in conformance to ISO requirements and minimum of two management review meetings.

QMS is a method of managing systematically logically sequenced interlinking processes of the company. As per ISO it is mandatory that a company has a manual which captures the process of company's QMS and review the same for better effectiveness & improvement.

The QMS covers all procedures required to support the provision of construction and engineering support services. All personnel and contracted staff are obligated to comply with the QMS adopted. The manual provides a framework to ascertain that all process control are effective, thus managing business risks and optimising process output.

#### V. CONCLUSION

From Observation & interaction with the members of organization the required data and the current ongoing process was understood.

The QMS manual and the other necessary documents were prepared as per the requirement of ISO

standard and the company's scope. The manual is used as a reference document.

Only certain time related documentation and formats are being used on site due to delay. Other documents are yet to be implemented on site.

Some of the reason for resistant to implement QMS

1. Lack of interest
2. Resistance to change
3. Increased work load
4. Shortage in time.

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