Diagnosis Quality management System in Construction Military Enterprise

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ABSTRACT

This paper illustrates how the diagnosis and evaluation the Quality Management System QMS in military enterprise which did not apply ISO 9000 according to quality gurus’ visions and using hepta-Scale of ISO to check gap analysis in QMS of in Iraq Directorate of Military Works (IDMW). The QMS can be defined as the organizational structure, processes, procedures, and resources needed to implement, maintain, and continually improve the management of quality. Although, ISO 9000 QMS standards developed by the International Standards Organization (ISO), is widely used in the construction industry. However, no satisfactory proof was found about the improvement’s positive reaction by ISO 9000 certified. There are many claims of construction organisations enjoyed the benefits and advantages of being an ISO 9000 certified are literally proven, the main objective of QMS implementation namely the achievement of stakeholders’ satisfaction in the construction projects is not up to the required level. Application ISO 9000 QMS in military enterprise still risky because of Correlation with the requirements of national security and its impact on mission performance of an army readiness. For example, Some American military (MIL-Q-9859) and NATO (AQAP-1) standards are the origins for ISO 9000.

INTRODUCTION

For the past decade, the construction sector has been going through a radical change driven by the (ISO) quality policy. The ISO 9000 series of quality management standards, guidelines, and technical reports was first published in 1978, and it is reviewed at least every five years. It was most recently revised and updated in 2008[1]. 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[2]. It is the only standard in the family against which organizations can be certified. Although certification is not a compulsory requirement of the standard. According to the ISO vocabulary of quality defines quality management as “all activities of the overall management function that determine the quality policy, objectives and responsibilities, and implement them by means such as quality planning, quality control, quality assurance and quality improvement, within the quality system”. Meanwhile, the definition of quality system according to the ISO vocabulary is “the organizational structure, responsibilities, procedures and processes needed to implement quality management”[3]. While, American Society for Quality (ASQ) defended QMS as “The organizational structure, processes, procedures, and resources needed to implement, maintain, and continually improve the management of quality.”

Recently, the number of companies obtaining certification of ISO 9000 Quality Management System (QMS) is increasing where The worldwide total of ISO 9001 certifications at the end of 2013 was 129446 in 187 countries and economies[4]. The total represents an increase of 3% (+32459) over 2012[4].

Dr. J.M. Juran (1904-2008) is the first guru in quality management and is called the Father of Modern Quality Management [5]. Dr. Juran submitted processes of quality management system which are: quality planning, quality control, and quality improvement which known later by Juran Quality Trilogy[6]. The Quality Planning Process (QPP), correspond to Quality Assurance (QA) in construction industry, starts at the customers, whether that internal customers or external customers. External customers have been determined by the
Market’s field, as well as, internal customers represent all employees in the organization, whether they are managers or a teamwork member[7–9]. The Quality Control Process (QCP) represents the second phase of QMS. It begins to identify quality’s characteristics which the organization needs to measure[10]. The Quality Improvement Process (QIP) is more important phase in the Juran trilogy. The improvement means a small or a large modification or changes in operations or existing products to make them more efficient, or fitness to use[11]. The main object of Improvement processes is contributing to the prevention of the occurrence of mistakes and the reduction of a corrective action [12]. As well as, the QIP makes the organization more responsive and more effective to customer requirements [13]. Both of[14] and [15]confirm that the quality improvement is necessary not only for the current results, but continually get better results.

Methodology:

The QMS processes are determined in IDMW according Juran vision in Checklist, which contains 12 items covers all QMS area. The QPP, QCP, and QIP are explained detail in sections 3, 4 and 5 respectively at “Juran's Quality Handbook”. While, The ISO 9000 of standards represents an international consensus on good quality management practices. It consists of standards and guidelines relating to QMS and related supporting standards[2]. For that, The ISO hepta-Scale is used to check gap analysis of the QMS actual implementation of the standard requirements through the identify of a specific weight of each item of paragraphs scale[16], [17].

Table 1 illustrates the items and degree weights of the scale ranging from "Completely applied and completely documented” which has weight 6 degree and "No applied and no documented” which has weight zero degree.

Director of quality control department in IDMW using available information in the records, documents and reports, as well as his personal observation to perform activities related to quality program to determine the real diagnosis of the gap between the QMS and the actual reality fills checklists.

Percentage of gap application of each process is extracted by the following equation:

\[ \text{weighted mean} = \frac{\sum \text{weight} \times \text{frequency}}{\sum \text{frequency}} \] .........(1)

\[ \% \text{ application} = \frac{6}{\text{weighted mean}} \] .........(2)

\[ \% \text{ Gap of application} = 1 - \% \text{ application} \] .........(3)

<table>
<thead>
<tr>
<th>Item</th>
<th>Degree Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completely applied and completely documented</td>
<td>6</td>
</tr>
<tr>
<td>Completely applied and partially documented</td>
<td>5</td>
</tr>
<tr>
<td>Completely applied and No documented</td>
<td>4</td>
</tr>
<tr>
<td>Partially applied and completely documented</td>
<td>3</td>
</tr>
<tr>
<td>Partially applied and partially documented</td>
<td>2</td>
</tr>
<tr>
<td>Partially applied and No documented</td>
<td>1</td>
</tr>
<tr>
<td>No applied and No documented</td>
<td>0</td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION

(i) Evaluation of QMS application:

Figure 1 illustrates reality QMs application in IDMW according to The Septuple scale checklists. Where QPP application is 71 %, QCP application is 58% and QIP application is 46% in IDMW. Impaired ability to documentation procedures and instructions, exclude certain documents from certain activities, such as inspection, testing, and inventory movement. There are no specific measures to pull the documents cancelled, with the continued circulation of copies unadjusted cause confusion and weakness in the performance of the departments concerned. Failure to follow the steps in the organization to improve the quality management system, and focus on improving the output and sometimes the process and using the style trials and without documentation. Not to develop plans for preventive measures to congenital anomalies or mitigation of cases of unwanted or expected to occur.

(ii) The Gap of QMS application:

Figure 2 illustrates reality QMs gap in IDMW according to The Septuple scale checklists. Where the gap application of QPP is 29 %, the gap application of QCP is 42% and the gap application of QIP is 54% in IDMW. The results show the importance of QPP, despite its application is high but its effect expand to the rest processes QCP and QIP. It makes sense, the rate of application decrease gradually synchronization with increased the gap of application in others processes. As shown in fig. 2
Summary:
Although the introduction of ISO 9001:2000 was viewed as necessary and was a valuable learning experience, there may be an alternative and more rewarding destination to reach. This supports the evidence that SMEs may appreciate the inherent value of ISO 9001:2000 but non-profits organizations are unwilling or unable to embark upon it due to its perceived prohibitive scale and cost. The military is very systematic and orderly in the way it conducts its affairs. Log Books and records are generally well kept. In the move towards the development of a QMS, this data set needs to be organized so that it can be used to identify quickly the non-quality and other problem areas. Management must also learn to appreciate and use the collected data in an intelligent way to control and monitor the quality of services rendered. This significant sector of the economy may then not benefit from the tangible and intangible benefits that the standard has been shown to deliver. It suggests that a scaled-down version or interim version of the standard is needed to encourage many more non-profit organisations to embark upon the journey toward establishing a formal QMS and associated benefit from significant operational improvements in the process. The results show that there are gap in application in the suggestion QMS and there are more efforts must be done to fill up this gap.

REFERENCES


