
89001.2000-advantages and obstacles in the Portuguese construction industry

M. Caetadinho
Department of Civil Engineering, Universidade Nova de Lisboa, Portugal

ABSTRACT: This article aims at outlining the major obstacles and advantages of implementing Quality Management Systems in Portuguese construction companies today, as well as discussing solutions to a successful implementation compliant with ISO 9001:2000. The overall present situation in the Portuguese construction industry is described, and the major difficulties to swing and successful implementations are identified. Each one is discussed based on its roots and solutions are proposed.

INTRODUCTION

Quality has been a subject of rich and abundant discourse. Its necessity is quite commended, but its own definition is not. Having been turned into a buzz word and a distinction flag, quality and the process of achieving it still enable and encourage structuring processes, vital for the progress of the Portuguese construction industry and of Portugal.

The creation of Quality Management Systems (QMS) has gathered the attention in both the industry and the academia sectors during the 80s and 90s. The Quality Management was favored and largely implemented in the USA, International Standard Organization’s (ISO) answer was the ISO 9000 set of norms, published in 1987. This set of norms was defining the industry standard in certification of QMS in Europe. Although the certification of QMS is several European companies, including Portugal, has been concluded, that period has mainly served to consolidate the accreditation networks and certification bodies. Critics to the creation version of the ISO 9000 set of norms included excessive complexity of procedures and excessive bureaucracy, without correspondently to the quality of the final product and consumers satisfaction.

ISO addressed these issues by publishing a revised and comprehensive version of the ISO 9001 norm in 1994. ISO 9001:1994 confines the concern for continual improvement and customers’ satisfaction, based on the cycle process “Plan – Do – Check – Act”. This new version set forth an important paradigm shift. The new version of the norm replaced the traditional a posteriori quality control by a during the process quality assurance approach. The principle was “the right product process cannot yield wrong results.”

PRESENT PANORAMA

The new version of the norm proved to be a success. The new, simplified document management system and the expediting of the norm led to a clear increase of the number of companies with certified QMS. The real coverage of industry sectors was also expanded to economy sectors, company types and sizes that had previously stayed out of this process. The certification of QMS generalized itself. At present, certified QMS can be found in companies of all sizes and economic sectors in Portugal.

However, the national companies of reference in the construction business only recently concluded their certification processes. This economic sector is still today underrepresented in the whole of the companies with certified QMS. Just as Glazer & Johnson (1997) state in their analysis of an implementation in a software organization, “First, it can be difficult to interpret how the requirements of the ISO 9000 standard apply to a software organization. The standard was originally developed for manufacturing organizations and understanding how the requirements apply in a software organization is not always straightforward” (p.696). Construction companies face similar challenges in their implementations, and it is not so easy task to transfer these requirements to such a new industry like construction.

MAJOR DIFFICULTIES TO OVERCOME

There are significant reasons for this. The construction industry carries out its production in ever changing locations, and its work teams, equipment, fringe conditions and interfaces are always different. The built object itself is unique, with a specific dimensioning...
and design. Never before has another identical object been built, and it is unlikely that it ever will in the future. In the ideal situation where all the resources, the concept and design are identical, at least the soil where the object will be built upon will be different.

3.1 Systematization

This inability makes efforts towards systematization, standardization and process automation particularly difficult. Although a significant amount of technology has been added to the equipment and materials utilized, the production process in the construction industry still maintains more similarities with craft production than with industrial production. This is probably the industry sector where new processes, techniques and trends arrive latest. Certification of QMS is not an exception. However, the substantial increase in recent years of the number of companies that concluded their certification processes indicates that this is a stabilized reality that cannot be ignored.

3.2 Management

Besides the specific physical and technical characteristics of its sector, construction companies also have particular management practices. The author is presently researching on this field and further articles on this subject are expected to be published soon.

The greatest challenges that construction companies face while implementing a QMS can be gathered in six areas:

- Systematization and structuring
- Document control
- Defining and maintaining procedures
- Clients' satisfaction - evaluation, analysis and actions
- Interactions between quality and production sectors
- Assignment and costs of manpower

The first point is not the most visible challenge, but it is probably the most important one. To implement a QMS it is necessary to clarify and often delegate authority and responsibility.

The systematic and comprehensive definition of the function records and the respective function matrix is a structuring task that formalizes in a binding way the function record, its functional ties, the superior functions it reports to and the minimum and preferred competences to be met in order to execute the function. Formalizing an organization chart is essential for process systematization.

The staff assigned to the monitoring and management of the QMS has an uneasy, misunderstood job. They are perceived as unproductive, often even a hindrance by the production staff. This image has been created by the assignment of people with insufficient production background to jobs related to quality in many implementations of QMS employed in the business or to the company has been applied a Quality related job. Staff with a mainly administrative profile has often been preferred, in order to avoid the increased volume of documentation. This situation has led to an incomplete and inaccurate verification of the procedures to be implemented. Therefore, we are assigned to quality functions that interact on a day-to-day basis with the production department should originate from the "Field", thus having earned respect by the production department's staff.

4 ADVANTAGES AND PERSPECTIVES

Achieving an ISO 9001:2000 certified QMS has become indispensable in various fields, as it opens up perspectives for the company. Some of the most important are:

4.1 Image and client relationship

A certified QMS is a prestige factor. The company proves viability, commitment to modernization, awareness to the current concept of quality and ability to operate important and positive changes in its structure.

This alone is already a factor for increased confidence by the customers. The latter have also added guarantees to the mandatory and predefined testing of claims. The assessment of the customers ensures the commitment to continuous improvement bring its customers and the company nearer.

The customer's opinions are heard and taken into account.

4.2 Restructuring and modernization

As portrayed above, the process of implementation of a QMS is a significant opportunity to restructure and modernize an organization. It is an attempt to widely accepted motive to change functions, procedures and old habits in the organization. This reform, would otherwise be considered an unnecessary and expensive extra effort.

It is also an excellent opportunity to introduce new tools and work techniques, thus restructuring the organization not only to achieve the certification but also to make it more effective and rational.

4.3 Systematization, equipment and process control

The certification of a QMS by ISO 9001:2000 is demanding in what concerns:

- Creation, maintenance and tracking of records concerning the measurement and monitoring of processes and products (section 4).
- Verification, calibration and maintenance of MMDs (section 7).
- Control and preventive maintenance of production equipment (section 6).

In conclusion, the level of demand has been criticized for increasing the process bureaucracy. However, it brings about a new structure to the work, more structured and orderly. In some companies this means were executed for the first time to written procedures and to the creation of records on a continuous, day-to-day basis.

4.4 Demands from production personal at all levels

The implementation of an ISO 9001:2000 certified QMS has been faced by a strong resistance from the production departments. This is mainly due to the restructuring of the work, placing self control and responsibility on a wider scope of functions. This represents an opportunity to change mentalities and work procedures, focusing on self control, responsibility, measurement and monitoring.

It is particularly important to avoid that the QMS is seen as a more obligation that can be fulfilled in a compressed manner eight before specific milestones, maintaining the mood of progress unchanged during most of the year. The most important of these measures will surely be the yearly auditing by the certification body. In such a context, this audit will be justified by a strenuous, but time limited effort. This is a major deviation from the spirit of the norm and should be fought against.

5 CONCLUSIONS

The certification of a QMS represents an important opportunity for modernization and paradigm shift for construction companies. It is particularly important for the small and medium sized companies in the business, due to the restructuring and work habit changes that it brings about.

The difficulties, obstacles and challenges inherent to this process have been portrayed above and should not be underestimated. Nevertheless, the advantages clearly compensate the inconveniences and the investment of resources involved.

Furthermore, it is crucial that the stakeholders, particularly the top management, are fully aware of the requirements and changes that a QMS involves. The organization will necessarily undergo permanent change that, when previously unknown, may drift from the initial expectation. A well informed, planned and systematic approach to the implementation phase avoids severe situations and reduces its duration, thus fast achieving stable operation and the desired benefits.

REFERENCES

