Integrated Management - a Basic Component for Building a Quality System in Construction

Postavaru Nicolae, Draghici Gabriela, Boiagian Harry Michelle

Abstract – From ancient times, mankind needed organization and coordination to be able to carry out its projects. Thus, over time, as requirements grew larger, it naturally emerged the necessity, development and improvement, of the skills of manager, coordinator, of a project team.

The paper develops the integrated management concept and tries to apply it for quality system management in construction.

This paper uses the method of the synthesis of the studied documents to demonstrate the necessity to implement integrated management.

Keywords – *construction sector, integrated management, quality in construction, standard quality*

1. INTRODUCTION

Since ancient times, mankind needed organization and coordination to be able to carry out its projects. In order to make impressive constructions such as the Great Wall of China or Egyptian pyramids, it was necessary for the activities to be organized and coordinated, with the primacy that depended on each other. [1]

This article uses the method of the synthesis of the studied documents to demonstrate the necessity to implement integrated management.

Thus, one can say that in Europe, the first transcript is the book "The Art of War," written by Chinese General Sun Tzu in the 6th century BC. The book was introduced to the West by a Jesuit, Father Joseph Marie Amiot, who translated it and made it known in Europe in 1772 as "The Thirteen Articles" [5]. The book is considered to be representative, and at present, in the field of Strategic Management.

Later, as a result of technological development, in the modern era, management emerged, for the first time, as science in the US. In this regard, J. Burnham's book "the managerial revolution" was published in New York in 1941. [3]

Integrated management is a complex science that can contribute to the added value to the process of implementing and implementing a project.

2. DESCRIPTION OF THE THEORETICAL MODEL

The theoretical model that is proposed and studied refers to the Integrated Management applied to the quality system in construction. Integrated management can be thought of as an optimal area where five important components meet [2], namely:

- The production concept (includes company requirements),
- The economic concept (represents the financial and banking environment)
- The legal concept - legislative,
- The concept of marketing (promotion and sales of products)
- The concept of coordination, the proper management of all the above-mentioned concepts.

In this way, integrated management, with its five components, can lead to sustainable products for society and the implementation of processes (technological, design, execution etc.) at a quality level according to the quality standard.

Sustainability includes the environmental component, social component and economic component. These components have an increasing dynamics, correlated with the demands and evolution of society, that it can not be said that an optimum obtained in a certain moment remains stable and constantly for a long time.

Sustainability of the project has the ultimate goal of increasing the quality of life and integrating man, with his needs, into the environment. In this respect, the urbanistic activity correlates with the actual construction activity.

In order to be able to manage the dynamics of the project permanently [6], the manager must have the necessary scientific, educational and competence support and, in addition, have the leadership skills.

Integrated and sustainable management, applied to the quality system in construction, can be a solution for the development and modernization of the construction sector and the management of complex processes.

The core values of the integrated management applied to a project relate to the level of quality, the vision for various time scales, the planning of the actions and the setting of the strategic and financial objectives for the project.

3. RESULTS AND SIGNIFICANCES

In order to design the model, first we will have to explain the concepts of the model.

3.1. Definition of the Quality System for constructions

The quality system in construction in Romania is defined by the applicable legislative framework, represented mainly by the Law 10/1995 on Quality in Construction [4]. The quality system is defined starting with art. 8 and up to Article 14, including "represents the set of organizational structures, responsibilities, regulations, procedures and means that contribute to the realization of the quality of constructions at all stages of conception, construction, exploitation and post-use."

Here too, are described the complex processes that the quality system in construction includes. In this respect, the quality system includes issues related to "performance and compliance of construction products; Certification and Authorization of Building Specialists; accreditation or licensing of analysis and testing laboratories in construction; certification of quality management systems in construction; energy performance

certification and energy auditing of buildings; technical regulations in construction; verification and technical expertise of projects; quality check of the executed works, technical expertise of the execution of the buildings, energy audit of the buildings; providing metrological activity in construction; reception upon completion of work and final acceptance at the expiration of the warranty period; the behavior of buildings and their interventions over time; post-use of buildings "[4].

3.2. Introducing the concept of Integrated Management

The concept of "Integrated Management" refers to the consistency of linear and non-linear processes so that the final result, detached, represents an overall picture without the omission of some information. This result will generate an effective, practical and applicable decision for all levels involved in the formation of the result.

3.3. Analysis of the proposed model and its significance

The Integrated Management Model, already presented on other occasions [2], includes five core components. These refer to: the production component, the economic component, the legal component, the marketing component and the coordination component, the proper management of all the above-mentioned components.

The production component refers primarily to the requirements of the company. Regarding the construction sector, the requirements of the company refer to:

1. the production of technical and project documentation, correct and applicable
2. the production of building materials with the declared actual performance, at the values required by the quality standards
3. the production of technology, equipments and equipments related to the field of construction
4. implementation of projects by the actual execution, according to the quality requirements
5. consultancy activity related to the four mentioned sub-domains, at a professional and appropriate level

The economic component refers to:

6. financing the subdomains of the construction sector, mentioned above
7. obtaining optimal project costs, starting from the conception to the closure of the project, after its implementation
8. forecasting, planning and price stability and inventory of materials, to minimize fluctuations in the construction sector

The legal component refers to:

9. the package of legal regulations, specific to the construction sector, which should have a unitary, consistent and profoundly technical character in order not to produce syncope in the construction sector
10. Legislative package referring to the establishment of construction companies and the provision of any specialized construction service with qualified personnel, with studies corresponding to the activity performed

11. general, legal regulations and those related to the construction sector, which should not contradict or overlook the specific ones; the regulations described in point nine should integrate monolithic and unitary into general regulations;

The marketing component refers to:

12. promotion activity in the construction sector
13. developing guild activities in the construction sector

Leadership proper, which refers to:

14. managing the thirteen specified subdomains, without these being the only possible subdomains of the construction sector

15. integrating the construction sector into the socio-psycho-human environment, in order to fulfill the main and ultimate purpose of serving the human society

Following the conduct of the activity on the fifteen directions of action, it can be said that at present in Romania there are several bodies, quite a lot, who manage parts of the processes, or one or more of the whole processes of the mentioned ones, a technology flow, an information circuit, a planning, a coordination, or a database that eventually encompasses all profile information.

The legislative framework is vast and often regulations are not basically corroborated or can not be rigorously applied. There is no informative system (computer program) that contains the basic program cell with connections to other applications, in order to create a digital library that is necessary for the construction sector.

The digital library we are proposing as a model could be for a county level, and then all digital libraries would reunite in a national digital library for data to be corroborated and completed nationwide. The availability of the necessary data and their accessibility would help to properly inform the documentation or production process and improve the prevention process, which ultimately can only lead to an increase in professional and quality discipline in the construction sector.

4. CONCLUSIONS

It is observed, after the study, that, for the control of the processes related to the construction sector and which compete for the construction quality, there is currently a state body, which exercises control, on the basis of a regulation [8] and of related legislation.

However, for regulatory proposals (outside the relevant ministry), to provide the necessary advice to carry out the prevention, to audit and establish a national database on building activity (as in other European countries), there is no unitary legislative mechanism in Romania that will lead to the construction of a data library for the construction sector and the finalization of a code of best practices and regulations in construction.

The present article opens up such a research theme that will continue in the future by creating working models that will help to improve the process of building all its directions of activity working models that want to transform, in practical, possible and efficient legislative processes.

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Note:

Nicolae Postavaru- Technical University of Civil Engineering Bucharest, Romania (e-mail: nicolae.postavaru@gmail.com)

Gabriela Drăghici - Ovidius University of Constanta, Bd. Mamaia nr. 124, 900356-Constanta, Romania (corresponding author phone: +40-241-619040; fax: +40-241-618372; e-mail g.drighici@yahoo.com)

Boiagian Harry Michelle – Chief of Civil Inspection Department, Constanta, Romania