CONSTRUCTION PROJECT MANAGEMENT IN THE CONTEXT OF FACILITIES MANAGEMENT

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Abstract

Construction Project Management (CPM) as a discipline for advanced study by construction professionals was very popular from late 70’s and apparently is still regarded as a natural professional progression path by many. Facility Management (FM), though a late-comer, has received more attention since early 90s and apparently more so by the turn of the new century in Hong Kong SAR and the region due mainly to the out-sourcing/re-engineering global trend.

This Paper attempts to review CPM in the context of present day FM practices. Like many of the management disciplines, there is extensive overlapping of the two. The main difference appears to be the time dimension within which the two management disciplines attempt to tackle and resolve.

Apparently there is no attempt for FM to replace CPM as a discipline or an area of study or vice versa. In effect, it would be beneficial for facility manager or project manager to understand each other’s role and function. Blurring of the professional boundary according to a recent study is the reality and very much applicable to the two disciplines.

Both CPM and FM are best analyzed from a system perspective. This paper attempts to place CPM in the context of FM within the system environment. The external factors affecting the success of both are very much interrelated and hence studied together.

Keywords

Project Management, Facility Management, Professional Boundary, Systems Approach

INTRODUCTION

Construction Project Management (CPM) and Facility Management (FM) are both very important disciplines for advanced study by building professionals. Both disciplines attempt to meet/resolve built-asset stakeholders’ need for an effective means to meet their objectives short or long term. In the context of Corporate Real Estate (CRE) or Asset Management (AM) both are of vital importance. Some may even view the two as the same, only that the time frames of the two are apparently quite different.

Walker (1984) defined Construction Project Management (CPM) as:

“The planning, control and co-ordination of a project from conception to completion (including commissioning) on behalf of a client. It is concerned with the identification of the client’s objectives in terms of utility, function, quality, time and
cost, and the establishment of relationships between resources. The integration, monitoring and control of the contributors to the project and their output, and the evaluation and selection of alternatives in pursuit of the client’s satisfaction with the project outcome are fundamental aspects of construction project management.”

Facility Management, on the other hand, attempts to encompass a much wider spectrum of competencies that some time may be regarded as outside the normal training of building professionals. A popular definition for “facilities management” (FM) is:

“The practice of co-ordinating the physical workplace with the people and work of an organization: (it) integrates the principles of business administration, architecture, and the behavioral and engineering sciences.”

(As defined by the US Library of Congress and often quoted by the International Facility Management Association (IFMA))

The two disciplines differ in scope, competencies need, involvement of the stakeholders and more importantly the time frame within which the disciplines work on. Both, however, can be analyzed using the systems approach. From a systems perspective, it is apparent that there exist certain degree of interaction and synergy can be achieved by systems integration.

CONSTRUCTION PROJECT MANAGEMENT - A SYSTEMS APPROACH

The application of the systems approach in the analysis of construction projects has been discussed in literature as early as the 1960’s (Higgin 1965) and well developed in the 1970’s (Morris 1972, 1974) and 1980’s (Walker 1980). The construction system includes all the resources and activities related to the design of the building or infrastructure works, the procurement mechanism whereby the construction team is selected and the control method devised, the actual construction, management and quality control of the whole process. Walker (1984) treated the construction process as an open system represented by an input-output model (Figure 1).

Figure 1: An input-output model of the process of providing a project (Walker 1996)
The construction process can also be treated as a factor of input to the project (Mohieldin 1989) or as a sub-system of the project system (Abraham 1990). The input to the construction system as described by Mohieldin (1989) includes resources and conditions (criteria and environment as laid down for the construction) and the output, the physical product of the construction (Figure 2).

![Construction Process Diagram](image)

From a “systems” perspective, the “input” to the construction system is the injection of resources including funding, design expertise, material and labour into the construction process while the “output” is the finished product which meet the required project objectives. Construction Project Management (CPM) is treated as the management discipline that oversees this input-output system.

**A PARADIGM RETHINK ON TIME, COST AND QUALITY IN CPM**

The management of time, cost and quality within the project environmental constraints are very often quoted as the main concerns (and sometimes the only concerns) of project managers. The clients or the eventual asset-holders, on the other hand, are supposed to be only interested in the “output” of the system. The successful delivery of a project is supposedly dependent on how effective the Project Manager manages these main attributes (time, cost and quality) of a project within a set project duration.

A more detailed analysis of most projects will review that the actual time-frame extend far beyond the conception till completion norm. If one use “funding” instead of “costing” to evaluate and manage project, the actual much longer time-frame and its implication to the viability of a project is even more apparent (Chan 1988). The importance of long-term building quality, life-cycle performance and maintainability of the “physical product” of a project beyond the project duration are already well appreciated by facility managers. The longer time-frame also means the longer duration that the project system will be exposed to the external environmental factors. These may include changing objectives of the client, macro-economic and political environment, the funding environment and many more.

If one accepts that the consideration of a much longer time frame is indeed important in ensuring the success of projects, one should not ignore the long-term facility management approach needed to meet the asset holder’s requirements. More importantly, while building professionals tend to concentrate on the internal project environment, very often the success or failure of a project is dependent on the external environment that affects the “open” project system (Chan 1988).
**CPM IN THE CONTEXT FM**

While Project Managers may be happy just to face with a set start and finish time frame in managing projects, Facility Managers have to live up with long-term responsibility (and possibly liability) in managing building facilities and ensuring the smooth running of the asset holders’ activities. FM itself can some time be misleading given its breadth and very wide scope of works that it attempts to accomplish long and short term. Most definitions of FM however, reveal a level of perceptive cohesion, in that it encompasses all sectors and peripheries of the management and operation of the micro and macro work environment and focuses on their integration and a system approach in managing facilities.

All practitioners from the real estate and construction industry are probably practicing facilities management or one part of FM though their involvement and perceptions may be quite different. Put it more simply, the main concerns of facilities management are:

- Organization or the business process
- People and their behavior individually or in group
- Facilities that may include building assets and other facilities of the workplace.

As a discipline or an area of study, the main interest is in the integration and the interaction of the three and the tools and techniques that enable such integration to achieve management objectives of an organization. As Becker (1990) put it more explicitly, the purpose of FM is to enable the organization “to win in an ever changing world”. Critics of FM contend that these are what building professionals and managers are actually doing in their daily operation and possibly part of their duties though without a clear disciplinary “description” or “title”. To many, CPM in the context of FM is very much the demarcation of their work functions within the time-frame that both are working on.

**CPM-FM INTERACTION**

Chan et al. (2000) described the “Blurring of the professional boundaries” as the modern phenomenon of professions working for the built-environment. The same probably applies to CPM and FM. Modern Project Managers have the privileges of overseeing a project from conception to completion before passing the torch to Facility Managers (who very often work for an outsourcing FM company accountable to an organization that do not want to bother itself with what they regard as “non-core” business). This, however, is a far from satisfactory arrangement in practice. There are already tendencies for long term asset holders to further integrate CPM and FM either in a total outsourced mode or an in-house mode. A re-visit to the project and facility management systems in the context of the individual organization and within the appropriate time frame will give the much-needed clue for the most appropriate arrangement.

While we advocate a “systems” approach to analyzing the management of construction projects and facilities as well as being systematic in our day-to-day management, the real-life situation is very often the contrary. The reality in project and facilities management environments can be described as ‘chaotic’ and at best ‘chaotic’. Finding order out of chaos at end of the tunnel is regarded as an accomplishment for the Project Manager. May be Hock’s (1999) approach to thriving in a ‘Chaotic World’ can provide the theoretical way-out for both the Project and Facility Managers. Hock (1999) described ‘Chaod’ as “any self-organizing, self-governing, adaptive, nonlinear, complex organism, organization, community or system, whether physical, biological or social, the behavior of which harmoniously blends characteristics of both chaos and order.” To survive and thrive in a “Chaotic” world need the “harmonious blending of order and chaos” and the functioning in a Chaodic world is
regarded as the fundamental organizing principles of evolution and nature. Apparently there is no conflict between “systems approach” and the ingenuity of blending of order and chaos by the Project and Facility Managers that seems to be essential in modern day management.

CONCLUSION

The development and evolution of FM and CPM are very often affected by the clients’ or top-management needs. Such needs are ever changing and the success and sustainable development of FM and CPM will be dependent on how responsive are the disciplines towards the changes. The current trend appears to be one on integration and responsiveness to meet results-orientated organizations. Instead of building walls to guard against new approaches or threats from disciplines under different names (or disguises), an open policy will probably win more supports from clients and society. The bottom line undoubtedly is how the benefits of the stakeholders and society at large be maximized by the adopted management approaches.

REFERENCES