Research on Multi-project Collaborative Management Based on Construction Enterprises

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Abstract: The construction enterprise is a typical project-type enterprise. The project management has entered the multi-project management stage from the single project management. The construction enterprises are facing more and more quantity, the scale and the area are extended to the new management problems, and the difficulty and complexity of the construction enterprise management is greatly increased. How to establish a reasonable project coordination management process, to achieve effective management of multiple projects in the same period is also facing the same problem. This paper does an existing research on the theoretical basis. In the case of large-scale construction enterprises, it establishes a multi-project management model operation system, multi-project management for construction companies, and is committed to providing some effective management programs are aim to improve construction companies and the project management capabilities to achieve the overall strategic goals of construction companies.

Keywords: construction enterprise multi-project collaborative management resources.

1. Introduction

The construction industry is an important basic industry that affects people's livelihood. With the deepening of reform and opening up and the gradual completion of the market economy, the more important thing is the acceleration of global economic integration. China's construction companies are facing profound changes in the environment, and the internal Changes in the environment and the external environment have forced companies to apply more scientific ideas, methods, and models for management, to strengthen the effective allocation and use of human, technical, and financial resources, and to increase the company's innovation efficiency and market competitiveness[1-2]. Since the 1980s, the project construction of China's
construction companies has deepened the implementation of the current domestic construction industry as the basic project manager responsible for project construction. The project manager selects the manager of the company's corporate library from the project. The project manager represents the company in the project management, project manager and corporate responsibility signed a contract agreement to perform contractual obligations and obligations on behalf of the company, and assume economic and legal responsibilities. The project manager has the right to control the resources fully, be responsible for the efficiency of communication with customers, and the speed of decision. The shortcomings of project management and corporate strategy are not uniform, the impact rate is not high, lack of information sharing between projects, it is difficult to monitor the implementation of the project and increase the company's risk. In modern project management of construction companies, more and more attention is paid to specification. The number of construction projects in construction enterprises is large, there are many construction projects, investment is large, and the impact on the national economy is large. The risk is high, the duration is long, the coverage is wide, the scope is extensive, the contractor's parallel construction, and the resource consumption [3-4]. The relationship between the sharing and coexistence of projects such as money, time, equipment, materials, and human resources. With limited resources, construction companies are often not able to complete on time, causing huge physical damage, such as economic losses and intangible losses of enterprise groups, such as the loss of corporate reputation and reputation. Therefore, more effective project management is especially important for large construction companies.

2. Existing Organizational Form

The project organization is different from the general enterprise organizations, social organizations and the military. It has its own characteristics. This feature is determined by the characteristics of the project. At the same time, it determines the principles of the organization and operation of the project. To a great extent, it is decided. The people's organizational behavior of the project has determined the project management process[5].

In general, after the project is completed or the project task is completed, the corresponding project organization will dissolve or organize other projects. Although often engaged in similar construction company project tasks or project management work, including project management team or team members are basically the same, but because of different projects have different uses, different scopes, different partners (such as owners, subcontractors, etc. ) And different objects and projects, then the organization is a one-off, temporary. Therefore, the project organization is a
one-time organization formed temporarily to complete a project task. The traditional form of project organization has project-oriented, functional electronics and matrix. (1). Project type
In the setting of a business project like a small business, all relevant functional departments from the project department no longer participate in the functions of other tasks but fully enter the project. The project manager is responsible for the resources of projects, such as manpower, materials, and equipment.

Fig.1 Project Organization Chart

(2). Functional formula
Functions are applicable to small projects, are not sensitive to the environment, and are easy to deal with project participants between interfaces. There is little pressure on time and cost. This is an informal form of project organization. The organization and function of the project is very weak. The project manager only acts as a contact group and collects, processes, and transmits information and provides consulting work. Therefore, the project manager is not the project owner. Only the project participants are coordinated and incentivized. This type of project organization does not require high standards for the operation of the company. The occurrence of part-time, conflict, and conflict is usually resolved by the organization and coordination of the company.

(3). Matrix
The matrix organization form is generally applicable when the enterprise undertakes multiple projects at the same time, and when the start time, scale and complexity of each project are different, as shown in Fig. 2.
The matrix organization structure is divided into three categories: weak matrix organization, matrix organization, and balanced matrix organization. In the weak matrix organization, the project manager is equivalent to coordination and supervision; the powerful matrix has many characteristics of the project organization in the organization. Strong full-time project managers and project managers [6].

(1) Comparison of three organizational structures
The comparison of project, functional and matrix organizational structures is shown in Table 1.

Table 1. Comparison of the three organizational structures

<table>
<thead>
<tr>
<th>Content</th>
<th>Functional type</th>
<th>Matrix type</th>
<th>Project type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Weak matrix</td>
<td>Parallel matrix</td>
</tr>
<tr>
<td>Project Manager Permissions</td>
<td>Little or no</td>
<td>limited</td>
<td>Less to medium</td>
</tr>
<tr>
<td></td>
<td>Full-time staff participation in the project</td>
<td>0-25%</td>
<td>15%-60%</td>
</tr>
<tr>
<td>Project Manager Role</td>
<td>Part time</td>
<td>Full time</td>
<td>Full time</td>
</tr>
<tr>
<td>Title of project manager role</td>
<td>Project coordinator or person in charge</td>
<td>Project coordinator or person in charge</td>
<td>Project manager</td>
</tr>
<tr>
<td>Project Management Executive</td>
<td>Part time</td>
<td>Part time</td>
<td>Part time</td>
</tr>
</tbody>
</table>

3. Problems at This Stage
(1) The issue of inter-project coordination still exists
What companies pursue is the common success of all projects, where multiple projects address new conflicts at the same time rather than the success of individual projects.
In each of the above three traditional organizational structures, each project manager is responsible for only one project, and it will only seek corporate resource projects for your team. However, the resources of a company are limited [7]. Therefore, it can lead to a project manager with a strong ability to be a project leader. While achieving great success, the shortage of resources and other projects may delay or fail to complete, which affects the overall interests of the company. When the amount of enterprise engineering is small, business leaders can effectively manage, but as the number of projects increases, the resources that need to be integrated and coordinated will increase, as will the relationship between projects, such as organizational structure, supply and demand, cooperation, legal relations, and other possible relationships, coordination becomes more extensive, more complex, and more difficult.

(2) Game between project manager and functional manager
When the company has only one project, the relationship between the project manager and the functional manager is single in each functional department of the project. When the enterprise has more projects to operate at the same time, the functional department must consider the project priority service. Therefore, professional and functional management capabilities can meet the objectives of the project, which will make the functional departments contradict and deepen.

4. Difficulties in Project Resource Integration
When discussing and focusing on the professional skills of employees in the functional departments and their related knowledge, use internal terminology, so that the various functional departments within the company will be separated, so that the project resources are artificially divided into several parts, each task will be broken. The communication between the department and the department should not allow the resources and information needed for the project to be effectively integrated, and the integrity and mutuality cannot be achieved.

(1) Balance the distribution of benefits among various projects
All projects have different goals and different levels of income, due to time-constrained projects and technical reasons, such as the difficulty of implementation of the project is different, in order to obtain the maximum resource support, to make the conflict between projects at the same time, deal with the project. In terms of balance of interests, each project also needs to balance their respective issues at different stages. Therefore, companies should design an organizational structure that not only achieves the goals of each project but also maximizes the benefits of the entire enterprise.

(2) Handle the relationship between the project department and various functional departments
The project manager and department manager have different responsibilities and
therefore have certain power conflicts. The project manager is responsible for project organization, personnel composition, project budget, and guidance, planning and control of the project. The department manager may influence the technical selection of the project and complete the staffing. To manage a project, you must understand and understand the project from the perspective of the company and understand the environment in which the company is located. This has a good understanding of resource requirements and the availability of resources to better manage projects [8]. At the same time, the relationship between the project department and the company's decision-making level should also be well handled. To understand the project manager's clear position in the enterprise, it is necessary to clearly understand a problem, that is, to whom the project manager reports the specific work. The project manager’s reporting relationship mainly depends on whether the company’s organization is a project-based or non-project-based organizational structure, and whether the project manager is responsible for the company’s profit or loss.

(3) Solve the conflicts of many leaders

From the perspective of administrative relations, project managers and department managers are leaders of the same position and project personnel. There is a phenomenon of “multiple leadership”, which inevitably results in the prioritization of projects and the allocation of resources (including personnel, funds, and time). Regardless of single project management or multi-project management, project team members also report to project managers and functional department leaders. If the opinions of the superior are inconsistent, the project department members are overwhelmed and the project’s goals will be affected.

(4) Build a multi-project support monitoring system

Changes in the external environment and internal resources can cause problems for construction companies to operate at the same time. More projects and policy makers should really care about project management, provide business support and administrative support, and implement support actions. At the same time, special organizations are required to supervise the implementation and control of the project, such as enterprise monitoring and financial monitoring.

5. Conclusion

To discuss the multi-project organization and management of large-scale construction companies, analyze and answer the existing organizational models of multi-project management, including project-style, functional-type and matrix-type, and analyze the problems of existing models, such as project coordination issues, project managers, and Game between functional managers. A deeper discussion of the requirements of multi-project organization and management on the organizational structure and
management issues that should be noted.

References


