

Research on Development Model of Whole Process Engineering Consulting under New Situation

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ABSTRACT. Under the new situation, as the total amount of social investment continues to increase, the requirements for engineering construction have increased significantly. The systematic error is an important factor affecting the development of China's engineering consulting industry, so the whole process engineering consulting is imperative. During the actual project process, the first problem encountered by most construction companies is how to select the whole process engineering consulting company, which can also be regarded as selecting a general contractor for the whole process engineering consulting service. On the basis of introducing the current market situation of whole process engineering consulting, the article puts forward the implementation path of the development model of whole process engineering consulting under the new situation in order to provide practical experience for practitioners.

KEYWORDS: The new situation, General contractor of the project, The whole process engineering consulting, Development model

1. Introduction

The whole process engineering consulting is a concept of comprehensive consultation, which is somewhat different from the traditional engineering agent. The engineering agent mode is a project management mode that gives the construction agents a complete “cut-off” [1] while the whole process engineering consulting model has changed the traditional segmented process of consultation, emphasized the concept of “whole process”, and highlighted the key role of the chief consultant in the whole process of engineering consultation. In the construction industry, the traditional construction mode is to separate the design, construction, supervision and other phases of the construction project, and each unit is responsible for different link with different professional knowledge [2]. The traditional development model of China's construction industry, which relies on rapid scale expansion to support the development of enterprises, has not been able to better meet the needs of the current market. Therefore, it is particularly important to improve the construction model as soon as possible so as to accelerate the upgrading and reform of construction industry. Under the new situation, the whole-process engineering consulting has effectively solved the problems of high costs and difficult division of responsibilities in traditional engineering consultation. It is conducive to make the structural reform on the supply side of the consultation industry, eradicate the long-standing contradiction between market supply and demand, and promote the high-quality development of the consultation industry.

2. Market Status of Whole Process Engineering Consulting

2.1 Potential Customers in the Whole Process Engineering Consulting Market

At present, the whole process engineering consultation has been applied in many fields and various types of projects. The clients faced by the consulting company are mainly the project investors and construction parties, which may be collectively referred to as owners. Owners in the construction market can be divided into two categories, the first category is large owners and the second category is small owners [3]. Carrying out the project contracting mode can effectively control the investment in the process of project construction, at the same time, it can effectively reduce the overall project construction cost, shorten the overall construction period and reduce the increased workload due to contract management. In the process of project construction, the whole project consulting business is entrusted to a consortium composed of one unit or multiple units. The aim is to improve the management service system of the engineering consulting industry and comprehensively guarantee and improve the quality of construction products in the construction industry. However, the service technical standards, contract system, detailed rules for implementation, bidding and entrustment modes for the whole process of engineering consultation have not yet been formulated and compiled [4]. In-depth analysis of the reasons why it is difficult to popularize the general contract of the project, it is not

difficult to find a huge amount of construction and development tasks in a specific period of time; There is no clear clue in project management planning. Lack of mature and feasible project management system and process; Throughout the whole life cycle of the project, it is typical for the comprehensive engineering consulting unit or its leading unit to provide the whole process engineering consulting. Foreign engineering consulting agencies have begun to vigorously explore the Chinese market, and domestic engineering consulting industry has also begun to try to enter the international market.

2.2 Problems Faced by the Whole Process Engineering Consulting Market

In recent years, China's engineering construction has made considerable progress, and at the same time, the new mode of general contracting of engineering has been continuously explored. The traditional form of engineering consulting service demand growth is weak, and there is a close relationship between the various stages of construction projects. In the past, engineering projects were divided into multiple stages. As a result, all stages and types of consulting services in the whole process of engineering construction belong to different competent departments, resulting in fragmentation of the consulting industry [5]. Only by fully understanding the spirit of the document, being brave in innovation, bold in exploration and practice, having the courage to be the first in the world, and trying first, can it be possible to find a correct path for the whole process of engineering consultation. The goal of the whole process engineering consultation not only requires good economic benefits of investment in the whole life cycle, but also emphasizes good social benefits and high quality of public services. There is no clear idea on how to carry out the whole process of engineering consultation and the division of responsibilities [6]. From this, we can see that the general contracting of the project has many advantages in the process of project construction, but in the actual situation, the general contracting of the project is still facing the dilemma of difficult promotion. Top-level design is problem-oriented, takes river basin or regional water system as the object, and carries out systematic research with comprehensive management as the goal. The work of each stage is closely linked, the integration of resources is high, and it is conducive to saving the total cost. It is the inevitable result of further development and innovation in the engineering consulting industry.

3. Organization and Management of General Project Contracting

3.1 The Mode of General Contracting

Supervision enterprises generally take less part in the decision-making and preliminary planning stages of engineering projects, but after the service team enters, in order to better complete the work tasks. The information, process and resources of each stage of the project are integrated into a digital model, which enables multiple professionals in geology, hydraulic engineering, mechanical and electrical engineering, construction and other fields to work together online, significantly improving the efficiency of design, construction and management, and greatly reducing risks. To a certain extent, this mode has changed the drawbacks of separation of construction design and construction in the process of engineering construction in China in the past, making the overall construction construction better. At the stage of construction decision-making and project initiation, the business includes investment consultation, feasibility study, land assessment and environmental impact assessment. In terms of vertical time series, it should be familiar with all phases of the whole construction cycle, including project planning, project initiation, decision-making, implementation, acceptance, handover, operation and maintenance, node construction procedures and management services. At the same time, because the main work of project contracting is to organically combine design and construction, the integration concept of general project contracting in this respect is quite similar to that of whole process consultation [7]. The control over the construction period of the project is weak and there are certain control risks. When the construction unit carries out its own ideas and intentions, the channels are not smooth or limited; The housing and construction authorities in the pilot areas are explicitly required to guide government investment projects to take the lead in participating in the pilot and encourage non-governmental investment projects to actively participate.

3.2 Task of Owner's Management

The traditional engineering consultation mode of engineering projects makes the internal organic connection of the projects separated by the phases of project management and professional division of labor. However, as the design and supervision belong to the scope of compulsory bidding, it is necessary to carry out another design or supervision bidding after bidding, otherwise the project planning and construction permit procedures cannot be handled. At the stage of project planning, innovative multi-service mode combination, multi-channel development, multi-regulation integration and top-level design are adopted. It is also the main force to assist the project construction party in the completion acceptance and data filing, and the supervision service team usually starts from the entrance to the project

site. At the same time, audit the project implementation procedure documents and review the construction of the corresponding quality assurance system. In fact, it reflects the different working modes of consulting companies involved in project management, and these modes should be covered by the whole process of engineering consulting. Provide seamless and non-separated integrated consulting services for the construction unit, and be responsible for the integrity, scientificity and accuracy of the services provided. However, the charging standard and applicable contract text for the whole process of engineering consulting services are also different from place to place and from project to project, even very different [8].

3.3 The Mode of Owner Management

In the specific implementation process, the functional departments shall put forward solutions or handling opinions, and the relevant person in charge of the construction unit shall make final decisions and issue instructions on important matters [9]. Build a project contract system, prepare project bidding documents, assist in contract negotiation and management, and participate in the establishment of the project company. Even if the company providing the corresponding service can be found, it will be restricted and hindered in policy, which will seriously affect the development of the consultation service in the whole process. Engineering consulting services are provided at all stages of investigation, design and construction, but the personnel in each stage have different control and service objects for the engineering project. The performance of enterprises and individuals is mainly set according to the bidding contents included in the whole process of project engineering consultation, which mainly requires performance of design, supervision, project management and cost consultation. Responsible for the whole process of engineering consulting work, and equipped with various professional and technical director, jointly form the whole process of project engineering consulting service institutions. Supervision services basically witnessed and participated in most of the process of project implementation, and have a more comprehensive understanding than other consulting services.

4. Development Model of Whole Process Engineering Consultation under New Situation

4.1 The Formation of Enterprise Whole Process Engineering Consulting Operation Mode

The whole-process engineering consultation bidding method can be based on policies and regulations, through one-time whole-process engineering consultation bidding, covering all or part of business contents such as project management, design, supervision and cost consultation, so as to save bidding cost and time cost. Government investment projects should take the lead in implementing whole-process engineering consultation and encourage non-governmental investment projects to entrust whole-process engineering consultation services. To form a full-process, all-round and diversified consulting service capability, which extends forward to the preliminary planning and backward to the defect warranty stage on the basis of construction supervision. By entrusting a full-process engineering consulting enterprise with strong comprehensive ability to sign a corresponding full-process engineering consulting contract with the owner, the full-process engineering consulting enterprise will be solely responsible for all the work of the full-process engineering consulting. Most of the professional and technical personnel are provided by consulting companies and various functional departments are set up. The construction unit only arranges a small number of personnel to work in key positions. Under the chief consultant, there are respectively the chief consultant in the decision-making stage and the chief project manager, respectively corresponding to their respective working groups and responsible for each stage of project progress. In the bidding process, price competition is allowed within a certain limit, and the state has recently clearly not encouraged the lowest bid, but advocated and encouraged the comprehensive evaluation method of reasonable low bid.

4.2 Combine Multiple Service Modes

In recent years, the government has issued a number of policy documents on encouraging and promoting general contracting of projects. In the process of developing the whole process engineering consulting business, entering a new stage of development, it is necessary to reform the organizational form, actively carry out organizational fission and restructuring. In the current engineering construction process, in order to effectively ensure the good progress of the construction process, the owner can obtain the whole process or phased engineering consulting services by looking for relevant professional consulting companies. The consulting company is directly responsible for the technical, compliance and rationality of the day-to-day work of the construction section. The construction unit is mainly responsible for major decisions and external coordination. The general contracting unit of the whole-process consulting service shall carry out contracted management of all engineering consulting services of the project. Straighten out the national administrative system, manage the industrial structure of engineering consulting, and establish a legal and regulatory system conducive to the whole process of engineering consulting. During the construction phase, the original

supervision lines will continue to provide on-site supervision services; However, a consulting line composed of project managers and consulting engineers of various specialties runs through the whole process of the project. It can not only make full use of the professional strength of consulting agencies, but also ensure the decision-making power of the construction unit and effectively reduce the management affairs of the construction unit. Under the unified leadership of the general manager of the project management, it was carried out in an orderly manner, ensuring the integrity and seamless connection of the consultation process.

4.3 Encourage Enterprises to Develop into Large Group Engineering Companies

Due to historical reasons, the business scope of most traditional engineering supervision enterprises in China is relatively narrow, mostly focusing on quality control and risk prevention during the construction phase. The general contracting of the project mainly includes four modes, the differences of which are reflected in the design stage of the project scheme, the preliminary design stage, the technical design stage and the construction drawing design stage. Engaged in technical and managerial services in all stages of the whole process of engineering construction projects; In many years of operation, there are also some shortcomings or defects in the construction mode of the project, and many problems reflected by the construction units are concentrated in. In the whole process of project engineering consultation, the first step is to get involved as early as possible in the preliminary planning and preparation stage of the project and track the project. Tracking the project in the early stage and understanding the project situation in many aspects are important links in the project reserve and the next work. To be jointly and severally liable for the management of the bid-winning consultancy subcontracting. Provide different levels of technical or management services for several stages or a certain stage in the whole process of engineering construction. Can complement and cooperate with each other better, so that the quality of project construction can be better guaranteed. A relatively macro principle of division of work responsibilities is formulated in the whole process of consultation and entrustment contracts, and further refinement is made in the project management system and work flow. It may be considered to open the market in the form of a consortium to accumulate achievements and experience in the early stage of the implementation of the whole process of engineering consultation.

5. Conclusion

Under the new situation, through in-depth discussion and exchange on the understanding and practice of the whole process engineering consultation, it is conducive to promoting the rapid development of the whole process engineering consultation. Speeding up the promotion of general contracting of projects, cultivating engineering consultation in the whole process, and improving the corresponding organization mode of engineering construction are the top priorities in the development direction of construction enterprises. Self-regulated and qualitative credit evaluation replaces qualification management, and the construction industry is about to usher in a new reshuffle and pattern. For engineering consulting practitioners, the most basic combination of professional qualities should be: engineering, contracts, laws and regulations. Change the traditional corporate culture values formed by segmented consultation such as project planning, investment consultation and engineering design. It is conducive to the implementation of structural reform on the supply side of the engineering consulting industry, providing integrated and comprehensive services for engineering construction, and improving the efficiency and value of consulting services.

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