

The application of Information Management in Construction Contracts Management

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Abstract.After the reform and opening up, China's market economy gradually recovered its prosperity, and information technology industry has also been developed following the reform. Till the 21st century the era of information explosion is formed and every industry cannot live without information management. The information management also plays a crucial role in construction contracts management, because information is associated with the terms of construction contracts, and the construction enterprise can fulfill the management of construction efficiently by using the information. Especially in the modern construction engineering, the transferring, collecting, storage and application of information are associated with the quality and efficiency of construction engineering. So we must strengthen the information management in construction engineering to guarantee the engineering construction.

Introduction

In construction project management, contracts occupy a very important position, so for the entire course of the project the information in construction contracts management process has a very important role. Who better access to and use of information effectively, it can get the initiative in the fierce competition. It is no enough to establish and improve the management system for a efficient, high quality running project. So we need to build on information management, through information gathering, processing, transmission and storage of analysis methods and techniques to achieve rapid construction of the project. [1] In building construction contracts management process, only the correct use of information management, mining construction unit needs information, can we promote scientific and technological progress and accelerate the construction of the development. Therefore, higher requirements of information management have been put forward in the construction contracts management process.

The necessity for information management in management of construction contracts

Due to the uniqueness of the construction engineering and construction contracts, contracts management has the following characteristics:

(1) As the construction project was a gradual process, projects of long duration, which makes the related construction contracts especially engineering contract have long lifecycle, therefore, contract management must start receiving bids until the contract is completed and the period of expiration is continuous and uninterrupted.[5]

(2) Since the contracts have higher contracts prices, contracts management has great economic benefits on engineering.

(3) Because of the interference events from the outside world in the course of construction, frequent changes in the contracts and its high risk, contracts implementation must be adjusted for changes constantly, which requires contracts management must be dynamic. In the implementation of the contracts, contracts control and contracts change management is extremely important.

(4) Contracts management is extremely complex, cumbersome, so it is a highly accurate, rigorous and accurate management work. There are so many various contract-related documents and engineering information in the course of project implementation. The contracts must be made in the management, handling, use, save the files and information.

(5) Because the overall goal of the project is included in the contracts, contracts management on the progress control of project cost management, quality management, total number of coordination and control, it is the core and soul of the project management.

Because of these features of contracts management, labor management alone is time-consuming and has slow pace of information transferring, delaying time, especially for a claim which has strong timeliness. If the information is not provided when the claim researches a certain time limits the claim will fail. At the same time, the claim file and its illustrative materials are so long and time-consuming when compiling and reviewing, which fail to meet the requirements of contractors participating in international market competition.[2] Today the information technology has been developed in high-speed, in order to improve contracts management personnel of efficiency, make its adaptation international of management model, it is essential to use modern advanced computer technology in contracts management of daily work and establish convenient practical of computer management network to improve project of operating management level effectively, which can protect claims personnel and the claims archives management staff from heavy work of text, and files and improve efficiency of claims work.

The application for information management in management of construction contracts

The importance of information management in management of construction contracts has been highlighted, if business leaders do not give attention and supports, it will have a direct impact on the quality of information, seriously, it can cause the entire project a serious quality defect only because of a message error. There are many reasons that result in unsatisfactory information management application in construction contracts management of our country. The result is a combination of many factors which including both the impact of the external environment and restriction of low quality of contracts management personnel.

3.1 The impact of the external environment

Including engineering design changeable, multi-period interference by the executive, project payment arrears, etc, these matters may cause additional terms of the contracts, and bring great difficulties to the formulation and adjustment of information management which make construction enterprises cannot response to engineering changes that will occur in advance in contracts management process, namely they cannot make a better construction contracts management by using information management.[3]

3.2 The restriction of the contracts management personnel quality

There are many obstacles traditional ways of working. Traditional contracts management staff uses the traditional manual management experience and a lot of work is done according to their experiences, in addition, they lack knowledge of the necessity of information implementation in contracts management.[4] Many contracts management staff refuses to contracts management personnel information management because they feel it would limit their freedom of movement and

negate their many years of experience in contracts management. Besides, they feel that it cannot be as handy as traditional management. Contracts management information collection is not comprehensive and complete. The sorting, statistics, processing, analysis of information is poor and no other person is responsible for these.

Through understand of the specific situation in construction contracts management process to, modern information technology must be used rationally, efficient management resulted from information and data technology should not be pursuit in blind at the beginning. Thus, we must face the fact that our country's low level of construction contracts management and low starting point of information technology. And on the one hand, intensify of work must be increased to accelerate information construction contracts management by using extraordinary efforts. On the other hand, a scientific attitude must be held to make our information process going into a solid path in construction project contracts management so that the changing from low entry point of information to the commanding heights can be achieved.

The feasibility for information management in management of construction contracts

4.1 Information systems objectives

(1) The comprehensive scientific management conducted on a variety of construction projects for various types of contracts signed (such as construction engineering survey and design contracts, construction contracts, contracts supervision, construction material procurement contracts, etc.) not only can deal with all kinds of information in the contracts quickly, but also can input the information to the new contracts and modify, destruct, query the contracts which have been signed.

(2) Manual storage of contracts on terms and related information can be replaced, which can free contracts managers from their heavy manual inspection.

(3) the need of dynamic management in construction projects can be meet, which can reflect the change of actual situation at any time by the way of contracts. In this way, some disputes and claims issues in the contracts management process can be resolved rapidly.

(4) Search function towards various types of contractual conditions (such as FIDIC Conditions of Contract) and common contract law and regulations is provided, in the same time, common model contracts are set to make it more Convenient for the contracts management staff to compose contracts rapidly.

4.2 Information system function

The system functions are shown in figure, these functions are an organic entirety, and they are both interrelated and mutually independent.

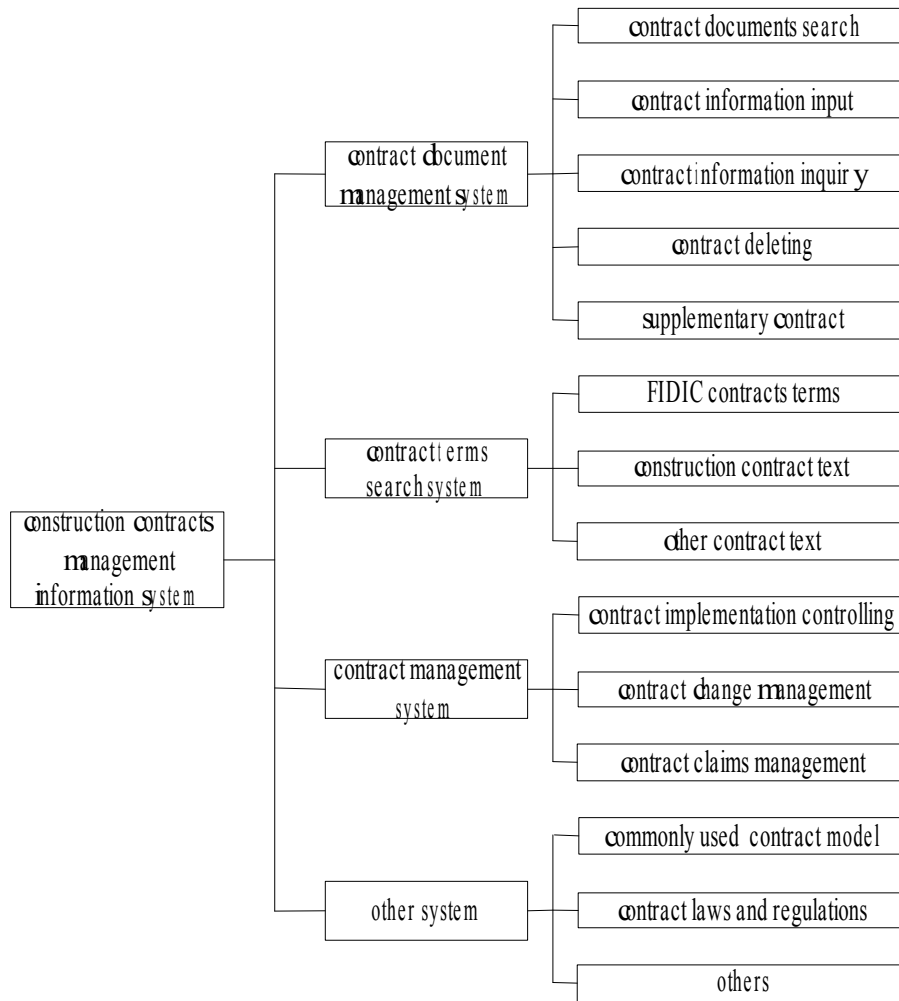


Fig. 1 The system functions

(1) Contract document management module: collect, organize the materials and other closely relevant information with contract management which formed in the work of formation of contract management, then search, query contract documents, entry, modification contract data and so on. Its data involved are: construction contract agreement terms, construction contract conditions, negotiate, change, specify the rights and obligations of the minutes of the agreement, the tender project bid notices, tender, tender documents, BOQ, standards, norms and other relevant information, technical requirements. Supplementary contract sub-module is mainly for new contract documents which is not involved in the original contract documents and later supplemented for other reasons such as engineering change in contract implementation process.

(2) Terms of the contract search module: all kinds of terms of the contract can be searched for to oversee the performance of the contract and the contract implementation. Terms of the contract can be divided into unconditional search and conditional search. Unconditional search is based on contractual terms of the natural order of search; conditional search is based on the conditions chosen by the user search query. Selection criteria can be divided into: term search, terms search and key words search.

(3) Contract Management Module: It is mainly involved in the construction of data on quality, cost, schedule, and other information. It is divided into sub-contract the implementation of the control module, the contract change management sub-module, claims management sub-module.

Contract implementation control sub-modules: It mainly analysis and implement dynamic

management for project quality, cost, schedule, and other aspects of information and contrast the implementation of the contract results with the contract program objectives, identify the differences between them, and thus the contract implementation programs can be adjusted.

Contract Change Management sub-modules: For the frequent project contract changes in the construction process, it can automatically generate a list of changes, change fees can be calculated to generate change details table to calculate the net change and change table with the original contract, and timely manner to reflect the changed the total investment changes.

Contract claims management sub-modules: It includes proof of claim management, claim management to identify, claim calculation management, claims management and related documents such as database management, and provide managers with the collection, query processing, updating the data in various engineering claims services , providing notice of intention to claim, claiming the report, making a claim calculation and so on.

(4) Other system modules: It is divided into three sub-modules: the common query sub-module model contract, the contract laws retrieval sub-module, other sub-modules. Commonly used model contracts query sub-module's main functions are querying ,searching and using a variety of contract model query in anytime, which can facilitate the formation of the contract, accurate and fast; contract laws and regulations sub-module's main function is querying existing contract management, contract laws and regulations related to contract management; other sub-module is designed to facilitate the users, allowing users to add their own functions and modules remain to be developed.[2]

Summary

Overall, since the information management has not been used entirely in the construction project contracts management, construction companies must constantly improve the contracts management system, vigorously train and introduce information technology personnel, and establish a suitable construction contracts management information management system. In addition, we should also actively carry information technology, combined with the terms of the contracts of construction enterprises to collect and establish information database, and comprehensively improve the level of management contracts for the construction, to make a full prepare for the efficiency of future construction.

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