

# Research on Problems and Countermeasures in Informatization Management of Construction Projects

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**Abstract:** With the continuous development of China's social economy, the construction industry has also entered a high-speed development, especially in recent years, the management level of construction projects has been greatly improved, but many problems have been caused due to the relatively backward management mode, large project scale, high construction difficulty and long period, such as a series of disadvantages in management which involves poor construction quality, inadequate management and etc. Therefore, in order to promote the better and faster development of enterprises, promote the rapid and stable growth of the national economy even advance the quality of life of the people, this paper mainly discusses the existing circumstances of information management and puts forward corresponding measures for the relevant personnel.

**Keywords:** Information Construction; Management Existing Circumstances; Countermeasures

## 1. Introduction



Figure 1: Engineering project information management chart

The construction industry is an important part of China's economic development, which has a very significant and long-term impact on the development of the national economy. With the rapid development of China's economy, people's living standards have also been continuously improved, and the construction management level of construction projects has also been paid more and more attention by people. People have also put forward higher requirements for the quality of construction projects. Therefore, it is necessary to strengthen the information construction management of the construction industry<sup>[1]</sup>. However, due to many problems in the construction process, construction accidents occur frequently, it is necessary to analyze and study the problems existing in the current construction field in China, put forward relevant suggestions and measures to solve these problems, and constantly strengthen the degree of construction informatization in order to promote starting point and foothold which are based on the rapid, healthy and stable growth of China's economy(As in Figure 1).

## 2. The key significance of implementing information management in construction projects

Under the traditional mode, the management is relatively extensive, resulting in low enthusiasm and

low efficiency of the company's personnel, even resulting in a series of problems. With the progress of information engineering construction, the introduction of information management methods in the financial management of construction companies can not only improve the project quality, but also improve the company's management level, reduce construction costs and increase the company's benefits. The scale of construction projects is becoming more larger, also the work of project management is becoming more and more complex and diverse which the traditional mechanical construction mode can no longer meet the requirements of modern enterprise development and projects. However, the information management system can achieve the coordinated operation of all departments, reasonable scheduling of staff resources, full utilization of raw materials, and increased utilization of mechanical equipment. The informatization construction management mode can greatly promote the development of construction projects and greatly reduce the construction costs. At the same time, the labor force of management personnel will also be greatly reduced, and the industrial strength of engineering companies will be greatly enhanced. While increasing the construction progress of construction projects, it also reduces the potential business risks for construction project companies to a large extent [2].

### **3. Characteristics of information management in construction projects**

The intelligent management of construction engineering generally has the following characteristics: first is systematization. At present, modern computer technology has become more and more perfect, and will be further improved and innovated in the practical process of engineering use and application. Various functional modules of the engineering information management system will be effectively integrated by using modern integrated circuit technology. Through the extensive use of embedded technology, the integration degree and integration ability of each functional module are further enhanced; Second is electronization. At present, various electronic means have been widely used in the field of construction project management, including wireless communication technology, database system information technology, optical cable information technology, and so on. The use of electronic means will further promote the improvement of construction project management level and quality; Third is engineering intelligence. Smart construction management has become the mainstream mode of the current project. Through the use of cloud technology, virtual reality technology, sensor technology, big data analysis technology and other advanced methods to build a three-dimensional on-site management system which can greatly improve the efficiency of internal information exchange and coordination between the project implementation units and employees, so as to promote the planning and allocation of project resources, also advance the management efficiency that could achieve the rapid response of big data and the rapid implementation of instructions, finally absolutely ensures the successful implementation of the project [3].

### **4. Analysis of the universal problems in the informatization management and control of construction projects**

#### ***4.1. Lack of unified standards for information management and control of construction projects***

At present, some developed countries in the West have gradually established perfect information management and control systems, and have achieved very significant results, thus making information management and control more perfect. However, the domestic construction engineering information management and control is still in a relatively backward state, as there is no relatively standardized standard, which cannot effectively use the collected data efficiently, and cannot effectively realize the comprehensive sharing of data information. Even in the operation process of some construction projects, there is a relatively significant situation of repeated data input, which undoubtedly causes a serious problem of information blocking. There is a certain lack of circulation between the management and control system of construction enterprises and in the actual construction management and control [4]. Because of the lack of relatively uniform standards for information management and control of construction projects, and with the continuous improvement of domestic information management and control, it undoubtedly has a great negative impact on the long-term development of the construction field [5].

#### ***4.2. Relatively limited in application scope of construction project informatization management and control***

Because the land coverage is quite large, the development of different regions is different. For

example, China's coastal economy has developed rapidly, and the understanding of computer technology is quite extensive. However, some central and western regions are relatively backward in development, and there are still considerable limitations in the use of computer technology. However, due to the differences in conditions between regions, the promotion and application of information technology has been caused, and there are also great technical differences between different regions. For example, in some areas where the construction is relatively backward, Internet informatization cannot be well applied in the construction information management process. At this time, the government must carry out certain training for the engineering technicians in these areas to make them have the awareness of modern development, and do a good job in the promotion of some relevant information technology, so as to improve the professional and technical level of the engineering practitioners<sup>[6]</sup>.

#### ***4.3. Management and control system of construction project informatization***

Nowadays, in the process of China's construction engineering information management, the lack of attention paid by the state to the information construction management system of the completed engineering enterprises has led to frequent problems in the information construction management system of the completed engineering enterprises, which has led to the current construction management work of the engineering enterprises cannot establish a unified standard. This will also lead to the fact that the established information construction management system of engineering enterprises can be used in part of the management of completed projects. Therefore, in the project management process of engineering informatization construction, various government departments often cannot communicate quickly according to the engineering informatization construction system, which limits the popularization and application of the engineering informatization construction management system in the field of engineering construction<sup>[7]</sup>.

### **5. Specific measures to strengthen the informatization management and control of construction projects**

#### ***5.1. Improve the understanding of information management and control of construction projects***

The improvement of information management and control awareness can make the process of information technology application more direct and efficient. Generally speaking, in the actual construction activities, some construction units' management of buildings is basically based on construction management. The construction control department is the direct supervisor of the construction management, and the common problem in the construction management at this stage is that the technical level of personnel is not skillful, and there are some conditions that cannot be instilled in the understanding of construction informatization. Modern information management can ensure the construction quality and safety of the whole building, so the management personnel on construction site are the most direct layer of information application, and the improvement of awareness must also be carried out at this level. In this way, it is necessary to further deepen the relevant concepts, set up enterprise training courses, and assess the content of the concepts taught therein which will become the main basis for enterprise upgrading. In the next stage, the frequency of informatization application was checked with good application effect rewarded, and bad application effect punished. In the process of carrying out the international construction scheme conference, we must pay attention to information management. The rigid provisions of such schemes incorporate the information management consciousness, which has a more realistic meaning for the construction process. The advantage is that the enterprise can rapidly form the ability of informatization for better development in the future which the advantages of informatization itself are gradually clarified by the enterprise management<sup>[8]</sup>.

#### ***5.2. Enhance the adaptability of information system***

In the field of construction engineering, especially the application in housing construction engineering, it is very vulnerable to the impact of its engineering construction environment, such as weather, geological conditions and construction cycle links which have extremely strict requirements. At present, most of the domestic information management and control software is tool software, which often cannot effectively adapt to this change. Therefore, it is very important to enhance the suitability of the information management and control system of construction projects. The operation of the information system is often carried out through the standardized innovation process of creation, optimization and induction. Plan the relevant information operation standards of the enterprise, further create all

professional system platforms according to the relevant standards, then apply the corresponding software, finally gradually create a complete information resource center to truly realize the comprehensive use of enterprise data resources<sup>[9]</sup>.

### ***5.3. Vigorously cultivate interdisciplinary information technology talents***

Like other industries, information technology requires people to have some basic skills, such as computer skills, database skills, multimedia skills, and communication network skills, which are necessary for information processing. Therefore, the establishment of training bases, the organization of training courses, the increase of corresponding university education, the development of online training, and the popularization of knowledge can promote the construction of information technology talents. In addition, with the continuous development of various information technologies, information technology talents must have the basic quality of comprehensive comparison and flexible application. Only in this way can we adapt to and meet the needs of continuous development and change to provide high-quality information services for people.

### ***5.4. Integration of information management and control system***

Each project company must carry out corresponding project planning according to the national and industrial specifications, and the specific content of these specifications is often very complex, and the amount of data it contains is also very large. In the construction project operation process, all aspects such as schedule, quality and safety, personnel control and so on must be fully considered, it means the corresponding specific contents must be fully considered in the development and use of the construction information control system, which requires the relevant departments to integrate these contents more deeply, so as to condense into a more complete and optimized operation environment.

### ***5.5. Further strengthen the construction of information management system***

In view of the fact that the construction data, production information and financial information generated by various participating units and different departments are inconsistent which is resulting in low communication efficiency and low conversion rate of information resources, it is necessary to strengthen the following aspects of research in the subsequent construction and improvement of information management system. On the one hand, in terms of design ideas, in order to meet the information sharing and interaction needs of participating units and departments, the system should be based on the project management content, and do a good job in the multi-level network construction of management and on-site information. In terms of module design, the main business characteristics of the participating units should also be analyzed according to the main methods of construction project management, so as to form different modules such as quality management, progress management, cost management, and safety management. In terms of multi-system coupling, in addition to the management function system, the information management system should also involve the tool system to help the construction engineering enterprises to successfully customize the system permissions, data classification and integration method, underlying logic of the public database, dynamic data reality and docking analysis tools of the participating units and departments according to their own needs and project characteristics, so as to fully improve the effectiveness of project management<sup>[10]</sup>.

## **6. Conclusion**

On the whole, the construction of information management is very beneficial to improve management efficiency and service quality, also can play a guarantee role in the control of the whole construction process, finally ensure the timely completion. In the process of exploring the digitalization of construction project management, it is necessary to realize the digitalization of all links of engineering design, production and implementation. At the same time, it is also essential to promote the integration of information management resources and integrate the modern management model into supporting projects, so as to form a relatively complete digital model of project management which will promote the significant improvement of the quality in construction project management.

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