

# Application and Development Analysis of Innovative Mode in Construction Engineering Management

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**Abstract:** *At present, there are still many survey, design, construction and supervision companies in China that have not established a supervision management system in accordance with the provisions of standard project management. Therefore, with the gradual improvement of the management level of production and operation in domestic construction industry and construction industry, more innovative and advanced models need to be introduced in practice in the field of construction and engineering operation and management. At present, the comprehensive, rapid and in-depth development of social and economic development and modern science and technology construction has effectively and continuously improved the scientific construction efficiency and level of construction industry management at home and abroad. Various construction modes that meet the needs and development characteristics of contemporary construction enterprise management innovation have been constantly emerging. The construction engineering fine management system plays a significant role in promoting the comprehensive, sustainable and healthy development process of the construction industry economy. Especially today, with the increasingly modern development of the global construction industry technology, in order to effectively improve the market comprehensive core competitiveness of all kinds of construction management enterprises, we especially need to continue to deeply study and explore the innovative operation mode of modern construction fine management, The traditional construction project management mode is no longer in line with the current development. Based on this, this paper aims to apply some innovative thinking mode theories in contemporary construction engineering activities in practice, in order to provide decision-making reference and method reference for relevant management staff in the construction industry.*

**Keywords:** *Construction Engineering, Management work, Innovation mode*

## 1. Introduction

The application of innovative building mode meets the requirements of the development of China's construction industry and can further improve the construction quality and efficiency. Obviously, it is very necessary to carry out construction management innovation in construction engineering management, so we need to speed up the management innovation mode of China's construction industry. With the continuous development of science and technology, information technology is gradually popularized in engineering construction management, and the management mode of construction engineering also needs to be transformed into a modern information management mode. In the traditional management mode, there are generally some problems, such as low management efficiency and poor management quality, which seriously affect the progress and development of construction engineering. Therefore, if we continue to use the traditional management mode, its disadvantages will make the enterprise lose its competitiveness in the fierce market environment, and then it is urgent to use the innovative project management mode. The enterprise should create a new management mode suitable for itself according to its own situation, so as to ensure the smooth progress of the construction project.

## 2. What is the Innovation Model

At present, we have entered a new era of rapid development of science and technology and emphasis on innovation. Intelligent information technology has also made remarkable achievements in various fields of people's daily life. In the project management system, the application of innovative

mode is reflected in construction management and on-site supervision. Under the influence of innovation mode, in the near future, China's construction enterprises may consider large-scale application of information technology in the control system to achieve the purpose of establishing intelligent control model. In the traditional offline mode, various on-site events and information are often integrated through manual processing, and finally handed over to the leaders for processing. This management method is inefficient. At the same time, due to human intervention, the distortion of technical information may also occur. The application of intelligent management mode in civil engineering enterprises can effectively solve these problems. The management model is mainly used to install sensors under construction site conditions, detect the changes of construction site parameters, warn any abnormalities in some parameters, and guide site managers to deal with data in time. In addition, the intelligent control mode can also realize the network sharing of structural information. The construction personnel can access and manage these information in real time without the use of smart phones. Under the conditions of the construction site, the intelligent control module can automatically identify the potential safety hazards on the construction site through human behavior analysis, expert it system and other modules, standardize the construction behavior of workers on the construction site, and avoid industrial accidents for some workers.

Concept innovation is often the basic premise for the continuous innovation and improvement of project management operation mode. In the development process of building concept innovation, the project manager must maintain the existing market thinking, constantly follow the general trend of technical development of the construction market, clarify the development status of the existing industry standard system and project development operation mode, and constantly lock the boundary of the development direction of project technical innovation. At the same time, we should make full use of the combination of modern information technology means and advanced engineering operation and management technology in practice, dare to put forward the scientific concept of breaking the tradition and changing the traditional operation and management technology mode, and form a set of correct modern management thought mode and method (as shown in Figure 1). In addition, through scientific, systematic and effective theoretical research, learning and training and accumulation of relevant knowledge and theories, strengthen the concept of innovative management thinking of enterprises, improve the comprehensive quality of enterprise managers, improve the overall scientific management and operation ability of managers at all levels, and lay a solid and powerful conceptual foundation for the innovation of innovative marketing management innovation mode. At the same time, innovation also means that compared with the previous traditional project management, it should pay more attention to the humanization of modernization and make the management operation of construction enterprises more efficient and reasonable. In order to make the new enterprise management system operate better, we must first carry out an innovative innovation on the old construction management system, which changes the disadvantages of unclear ownership of rights and responsibilities in the construction of the previous project organization and management system, Have a systematic and complete understanding of the projects being followed up in the engineering project with innovative management techniques.

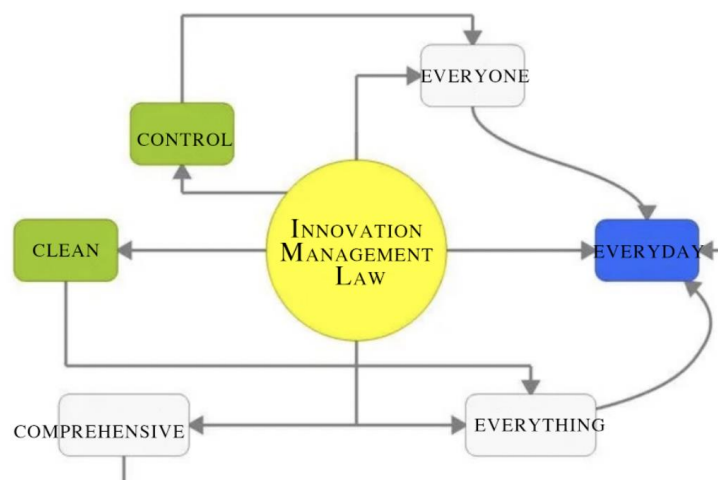


Figure 1: Innovative operation and management technology mode

At present, the competition in the construction industry is becoming increasingly fierce. In order to effectively compete with the competitive resources of the market peers, the construction unit should constantly innovate the traditional innovative management mode in the engineering project, and continuously improve the economic and social benefits of the enterprise unit. At the same time, by strengthening the publicity and implementation of innovative management and building a high-quality and high-level construction team, we can further improve the level of construction project management and more significantly achieve the purpose of building enterprises and improving production efficiency and safety level.

At this level, we should first reflect the high level of internal management, the use of talents should be more professional, pay attention to the internal training of the enterprise, expand the high-quality management team, how to reflect the integration of high-quality employees and the rapid development of the enterprise, and show the advantages of talents in the market competition. In addition, we should pay attention to the innovation of enterprise management and operation. Today, with the rapid development of construction enterprises, with the continuous development of technology and the upgrading of technology, we must constantly push through the old and bring forth the new in order to adapt to the current social development and not be eliminated. The development of enterprises should keep in mind the order of the times, respect the development strategy, pay attention to the development status of the market industry, and conduct sufficient investigation and research to learn the management mode and experience of advanced construction enterprises, so that their own enterprises can always have high-speed development and competitiveness of the times. This idea is conducive to the benign competition among enterprises in the construction industry and the faster and high-quality international development layout.

### **3. Value of Innovative Management Mode Promotion**

#### ***3.1. Follow the Market Trend and Improve the Competitiveness of Enterprises***

The development of construction enterprises is closely related to the development of construction industry and even the market. In order to better adapt to the development of the market and seize the development opportunities in the new era, the construction industry must reform internal and external innovation activities to meet the needs of the market and the people. The internal reform of construction enterprises refers to the innovation of project management mode. The traditional project management mode is unlikely to continue to operate in the new market demand environment. Enterprises must establish innovative management mode, under the guidance of the new management mode, help construction enterprises implement project management reform and improvement, introduce modern information system and automatic management methods, and improve management level. On the basis of improving the economic benefits of enterprises, it can greatly improve the management efficiency and core competitiveness of construction enterprises.

The rapid development of market economy has promoted the development of construction industry. Modern construction companies are facing fierce market competition. Construction enterprises need to continuously improve the construction efficiency and quality according to the actual situation, establish advanced management awareness, reasonably optimize the management mode, change the traditional management concept and ensure the smooth progress of construction. Relevant enterprises and units can fully improve the disadvantages of the old management mode in engineering construction by making rational use of electronic innovation management and information technology. From the perspective of conforming to the overall market trend, the innovation management mode will cooperate with the development of the whole construction industry and help to further improve the market competitiveness of implementing units and enterprises and the sustainable development level of the construction industry.

#### ***3.2. Optimize Project Resource Control and Allocation***

Putting the management concept, innovative management mode and perfect management system of modern enterprises into the scheme and construction process of relevant units to improve management efficiency and quality can optimize the composition of construction equipment, materials and personnel while implementing the information sharing of management system. In construction, the key to construction project management is to improve economic benefits, optimize project resource management and control allocation and promote production development through the above methods.

Therefore, through innovative management mode to optimize resource allocation, make rational use of resources, reduce construction energy consumption and reasonably allocate construction materials, so as to control the construction cost of construction enterprises and ensure the smooth progress of construction work.

From the perspective of rational utilization of resources, the adoption of innovative management mode can effectively optimize the inherent structure of engineering system. On this basis, the application of innovative management of the project can comprehensively coordinate and optimize the allocation of manpower, energy and materials through the information system database and the actual operation of the project. Reasonable resource allocation can avoid the disadvantages of the traditional management mode in the process of project implementation. For example, the project development is too single, through the innovative management mode, At the same time, it can also ensure that the sequence of project implementation is carried out side by side and the types are carried out synchronously.

### ***3.3. Realize Scientific Management of Construction Engineering***

Improving construction project management is the basis of harmonious development and construction. The construction quality and benefit largely depend on the management mode. Therefore, we can use modern technology to manage construction projects, such as Internet and computer technology, and manage construction projects in an innovative way.

In order to encourage construction enterprises to adopt innovative management mode and optimize the internal management organization, the management team must implement the innovation of management organization according to the internal business needs and social industry environment. In the specific organizational innovation process of the company, the leading group divides the elements, ownership and responsibilities of each sub project, and strengthens the circulation and interaction of internal management information of the construction enterprise. In the current construction project management, there are often differences of opinion among managers. Therefore, in the process of optimizing the internal management organization, the leading group must clarify the responsibilities of each management post and their respective responsibilities. Enable construction project operators to sue relevant personnel in case of management problems. Therefore, construction engineering companies can effectively improve the standardization and scientificity of engineering management through organizational innovation, and realize the scientific and effective management of construction engineering.

## **4. Problems Existing in Current Construction Project Management**

In the process of China's social and economic development, construction engineering related industries have become the economic pillar industries in many regions of China, and their development has received policy support from the government. However, in recent years, in order to restrain the rapid development of housing economy, the government began to implement the policy of restraining the development of housing economy. China's Construction Engineering and related industries have entered a low profit period, and the competition between construction industry and engineering industry is becoming increasingly fierce. In this context, construction enterprises must improve their management level, actively innovate and strive to improve their own development benefits. However, from the actual situation of China's construction industry, many construction project enterprises are facing many management problems and lack of innovative management mode.

### ***4.1. Insufficient Awareness of Project Management***

With the rapid development and maturity of modern construction engineering industry, the leading department personnel of most construction enterprises in China will pay too much attention to the economic benefits of the project when engaging in the practice of construction project management, but often ignore the necessary quality and safety management and technical system support behind the engineering system that can truly ensure that a specific project finally presents the goal of good and high engineering benefits. As a result, the whole Chinese engineering project managers only have insufficient investment in the systematic research on the level of engineering quality management and scientific consciousness, which is not completely the coordination and development goal of realizing scientific management and people-oriented, promoting the continuous improvement of the project and

high-quality economic benefits. The existing most effective operation and management modes are mostly achieved by the government through the use of some economic and administrative means to achieve mandatory specific technical requirements for the implementation process of some engineering projects. This economic policy means often can not provide timely and accurate macro scientific and technological guidance on the actual operation and development law of various economic projects, The innovation of project enterprise management and operation and the management optimization in the mode have not been able to form a theoretical model with real scientific significance, and establish an investment market suitable for the modern market and the development and construction environment of contemporary engineering projects.

#### ***4.2. Backward Management Mode***

In the construction process, the construction project is facing different environmental requirements, and the overall construction management level is still in the stage of improvement. Some projects adopt outdated management methods, which can not cope with increasingly complex design tasks, fully control quality and safety risks, and achieve the goal of maximizing the overall benefits of the project. With the development of the era of social progress, the management thought at the national level is bound to explore and innovate. We should learn from the advanced developed countries in the management concept and management mode, and abandon some traditional manual management modes, so as to adapt to the development of the current construction industry and cater to the era background of Internet data. Therefore, in order to meet the difficulties with innovative thinking, we should firmly establish a scientific management mode and promote the internal development of the enterprise. In the construction contract management, construction materials and construction machinery are usually in the charge of the business unit, which hinders the effective management of material quality to a certain extent. Although employees can use the employment management mode to recruit construction workers quickly, the overall quality and technical level of construction workers can not reach the ideal level. This will directly affect the overall management level of construction projects. In addition, there are many problems in the application of structure management method. In particular, it is obvious that many engineering companies are still in extensive operation and do not fully implement the concept of fine management. The overall construction management benefits are relatively wide, the management is difficult to control the details of all links of construction, and most employees rely on work and leadership experience. All these factors will lead to the failure of design management.

#### ***4.3. Imperfect Project Management System***

Under the background of breakthroughs in construction projects, there are still imperfect corresponding management system and lack of professional and systematic project organization and management system. At the same time, the relevant management theory courses in Colleges and universities also lack the overall discipline system, which leads to the imperfection of the management system in Colleges and universities. The innovative project management mode only exists under the market conditions and in the process of project construction and development. They learn from each other and quote from each other. However, due to the lack of theoretical basis of engineering management and stable talents, most units cannot improve and optimize the project management system and implement the project. Under the traditional project management mode, the allocation of management process is often completed according to the traditional project management mode, rather than through the development of comprehensive information system.

The layout, ideological and management problems still exist in the domestic construction engineering industry. It is particularly important to establish a systematic and professional management system as soon as possible. We should continue to strengthen learning. We can choose some backbone enterprises to go to institutions or universities for training, improve and enrich theoretical literacy, stabilize talents, improve self-worth and welfare benefits, and optimize and improve the layout strategy through the project implementation of the project management system, Instead, we can not always use the traditional project management strategy, and do not adopt some advanced information processing methods and theoretical methods.

## **5. Application of Innovative Mode In Construction Project Management**

### ***5.1. Innovative Enterprise Engineering Management Concept***

In the process of innovative management mode of construction engineering, engineering companies must develop innovative management ideas, so that management first depends on advanced ideas. This requires the management team to conduct a comprehensive analysis of the company's actual situation and industrial market conditions before carrying out management work, so as to obtain the return of project management. In the process of construction project management, the steering group must consider various factors to ensure management performance. For the current construction project, in order to innovate the management mode through scientific ideas, managers must change their own management ideas. In practical work, managers need to keep up with the pace of the development of the times, learn from the advanced management ideas of other enterprises, and innovate their own management ideas, so as to improve the management efficiency and make the project management work play a better effect. At the same time, enterprise managers should also innovate the management mode in combination with the development of the times, make scientific arrangements for all aspects of the project content, and improve the management objectives of construction projects (project safety, quality, construction cycle, capital cost, etc.) through reasonable and effective optimization measures, so as to deal with the relationship between project safety, quality, construction period and cost.

### ***5.2. Improve the Management System of Construction Enterprises***

In the current process of rapid social development, if we want to establish an enterprise system that conforms to the development of the times, we need to adopt scientific management methods. Firstly, the enterprises, projects and responsibilities in the construction process should be clarified; Secondly, it is necessary to reasonably coordinate the relationship between project management, find and improve the deficiencies and problems existing in the construction process, and improve the efficiency of project construction. Therefore, the first thing construction enterprises should do is to develop and strengthen their own management work, form a management system suitable for modern development within the enterprise, effectively avoid various risks brought by the development of modern society, reduce possible problems of poor management, effectively improve the execution of construction and the level of project management.

When implementing innovative management mode, construction engineering enterprises should actively use a variety of monitoring modes to improve the overall efficiency of project management. On the one hand, each supervisor shall clarify the supervision and management responsibilities of the whole construction process. All supervisors, owners and construction units work together to establish a scientific management system, so that all subjects can actively participate in the supervision, and finally form a perfect construction management system; On the one hand, the construction supervision department should establish the dynamic monitoring mode of the whole construction process. On the other hand, the construction supervision department should also strengthen the dynamic monitoring of the construction process. If the supervisor finds problems in the control process, he shall timely analyze and adjust the project management objectives and management scheme to improve the comprehensive benefits of construction control.

### ***5.3. Enhance the Importance of Safety Management***

It is imperative to do a good job in safety management, and we can't relax at all. For grasping actual results, ensuring stability and promoting development, we must first start from the management responsibility. Enterprise leaders must attach great importance to the safety production responsibility system, carry out daily supervision through a series of measures such as system and logistics support, and strengthen the investment related to safety production, including the allocation of safety production specialists and the establishment of special funds for safety production. We should pay close attention to the implementation, hold regular meetings and mobilization, publicize warnings and popular science education. For construction project managers, we should always be aware of the dangers, consider the serious consequences of safety accidents, and establish a long-term mechanism to promote the continuous promotion and development of the work.

#### **5.4. Improve Management Efficiency through Information Technology**

We should strengthen the application of information technology, improve the thinking mode of traditional engineering management, and increase information processing, so as to improve work efficiency, reflect the management level and optimize the personnel layout. Some Internet enterprises can be introduced to carry out personalized evaluation and customization of enterprise system and management to add some system monitoring and post evaluation performance methods, encourage employees to improve output value and performance for enterprises, and eliminate the phenomenon of "one size fits all" and "big pot". Conduct off-site guidance and monitoring through scene AR, virtual reality technology and other discoveries to realize remote platform management. Efficient use of data mining means and cloud platform storage technology, through the enterprise's internal independent management data analysis platform, accurately connect various data in the daily management process to various modules, improve efficiency and reduce the previous complicated and trivial manual statistics. Integrate information technology into the construction of project management mode, realize information technology innovation management mode, and realize company wide innovation from the source of innovation. Changing traditional thinking and long-term consideration can further improve the construction management level in all aspects and ensure the efficient development of the project under the concept of sustainable development.

#### **6. Conclusion**

The management mechanism is an important link to promote the construction, which can standardize the construction process, reduce the construction cost and reasonably control the construction progress. The project management in the construction industry must apply the innovative mode to all kinds of work. Project management should be combined with information technology to continuously improve the level of project management, so as to make the construction project have broader development prospects. The development of enterprises depends on the development of innovation activities. Innovation is integrated into various industries to enhance the vitality of enterprises. Especially in the construction industry, the innovation of construction project management is in line with the overall development trend of China's construction enterprises, and has important significance and good application prospects. Therefore, in the development process of the construction industry, we must fully consider the particularity of construction technology and the corresponding innovative management concept, reasonably formulate the management scheme, and finally establish a scientific management mode according to the actual situation and use this management mode reasonably. Further improve the economic benefits of construction enterprises in the process of operation. Through the analysis of the innovative application and innovation trend of the construction management mode, it is determined that the innovative management mode of the company is to improve the core market competitiveness of the company.

#### **References**

- [1] Gao Junyan. *Application and development analysis of innovative mode in construction engineering management. Modern property (zhongxunjian)*, 2019 (12): 106
- [2] Liu Shuicai. *Application and development analysis of innovative mode in construction engineering management. Modern property (zhongxunjian)*, 2019 (12): 115
- [3] Wu Yan, Tao Xiaojun. *Application and development of innovative mode in construction engineering management. Farm staff*, 2019 (01): 184
- [4] Xiao-Liang L I. *Analysis on the Application and Development of Innovative Mode in Architectural Engineering Management. Management & Technology of SME*, 2018.
- [5] Gao Yanming. *A Brief Discussion on the Application and Development Analysis of Innovative Models in Construction Engineering Management. Construction Engineering Technology and Design*, 2015(8).