

**THE PRACTICAL APPLICATION AND FUTURE TREND OF PROJECT MANAGEMENT
IN INTERNATIONAL ECONOMIC COOPERATION IN CHINA**

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With the development of the economy, the trade of China and other countries in the world are closer. There are more and more international economic cooperation projects. It improves China's international influence; meanwhile, it puts forward new and higher requirements for Chinese enterprises to carry out international project management.

With the increasing scale and quantity of international engineering projects, the content of project science and technology has been strengthened. With the change of the owner's demand for the project, the development of international project management has accelerated. In international project management, people need to innovate from the management mode, concept, thinking, and other aspects. The traditional management mode can not keep up with the development of the times.

On the one hand, the implementation of project management for international cooperation projects is conducive to the improvement of economic benefits, on the other hand, it is also conducive to the systematization of project management. In recent years, the scale of international cooperation projects is growing, there are more and more risks and problems. The main problem is that there is no clear understanding of the development characteristics of international project management and the lack of research and exploration on the reform and innovation, which leads to the international project management not meeting the needs of time [1, p. 34]. This article will start with the international infrastructure cooperation projects, and discuss the development status, problems in application, and future trends.

1. Development history and characteristics of project management

Ding Ronggui, global research coordinator of International Project Management Association (IPMA) and editor in chief of Project Management Review, pointed out that, through the summary of the development achievements of project management in China in the past 20 years, it is concluded that project management has great values for personal ability improvement and career development; it plays a supporting role in the development of enterprises; it has a great impact on the construction of related disciplines and related service industries in colleges and universities. Project management has a strong positive correlation with the development of the national economy.

In the 1980s, China introduced the theory, method, and system of western project management, and began to implement the international qualification certification of project management in the 1990s. In June 1991, China established the China Project Management Research Committee (PMRC), which is the only organization representing China to join the International Project Management Association (IPMA). In July 2001, authorized by the Certification Committee of International Project Management Association in Beijing press conference, IPMP China Certification Committee was formally established [2, p. 9]. IPMA is responsible for Chinese international project management professional qualification certification. After 20 years of development, the whole society of China pays more and more attention to the relevant work. The number of registered candidates for Project Management Professional (PMP) has increased year by year, from 316 in the first year to 105000 in 2019. It is estimated that the number of registered candidates will reach 200000 in 2021. The detailed data is shown in Fig. 1.

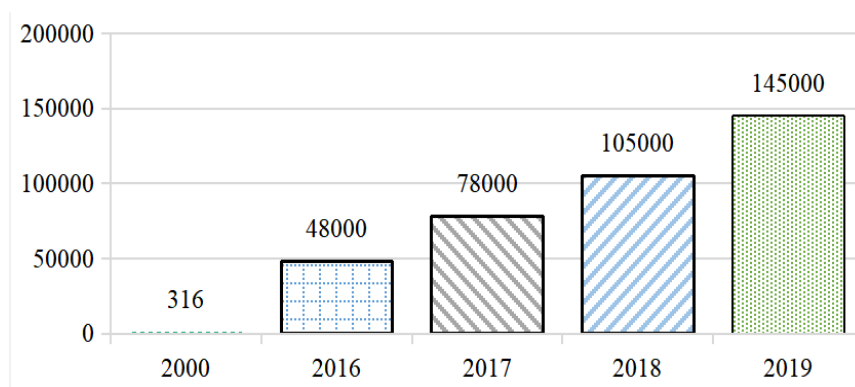


Fig. 1. – Number of Project Management Professional candidates in China, persons

At present, there are more than 330000 PMP holders in China, accounting for 1/3 of the global number of PMP holders. In 2019, 145000 applicants have nearly 50% of the global number of applicants. From the source of candidates, the majority of foreign enterprises are in the first place, then developed into Sino-foreign joint ventures, and then the proportion of private enterprises (44,14%) and state-owned enterprises (20,18%) [3, p. 21]. This data also reflects that the development of the PMP examination is closely related to the national economic activity and the innovation level of the industry. PMP candidates show a trend of youth. Since 2010, the proportion of candidates over 36 years old has declined, and 26-35 years old are now the mainstream. Although project management has been developing vigorously in China in the past 20 years but compared with some developed countries, there are some differences and gaps in the theory, method, system research, and application of project management. These differences come from various aspects of economy and culture. Through the analysis of relevant personnel, the scientific level of project management in China will be improved continuously, so as to further improve the international project management efficiency.

2. Characteristics of Chinese and foreign project management

Because of the huge historical and cultural background between China and foreign countries, the characteristics of project management are also different.

Firstly in the management mode, generally speaking, the international project management mode refers to the project management operation mode of large engineering companies or management companies engaged in international engineering construction. There are some Chinese companies that adopt the mode of owner's own management. The characteristic of this mode is that owner directly responsible for the whole project, mainly including the construction and design of the project. This «headquarters» management mode has been used for a long time in China, but with the increasing internationalization of project management, the traditional owner management mode in project management is being impacted. More and more engineering projects begin to move towards the mode of Sino-foreign cooperation. In this process, the innovation of management mode becomes urgent. Foreign project management adopts the management mode that the owner employs the contractor. The project contractor carries out the integrated management of the project, the professional management team carries out the design and construction of the project, and the project manager is responsible for the construction of the overall scheme for the project. It also has the characteristics of phased management. As the construction and management of international engineering projects are faced with some special problems, there is a need to innovate the management concept on the basis of the original management mode, flexibly use the management mode, and seriously implement the contract management. To ensure the quality of the project, improve the economic efficiency and save the cost of the project as the main goal.

Secondly, in terms of management team building, most of the Chinese-style project management teams are project managers appointed by the company with higher positions in the organization. Project managers drive projects according to their own power, that is, the rule of man is driven by power. Some foreign countries pay attention to logic, abide by rules and regulations, and follow the process of project management. In short, it is «rule of law» and process-driven. Process-driven is carried out according to the «law» which is solidified and abide by everyone, while the rule of man is divergent, which is carried out according to personal style characteristics.

3. Key problems of international cooperation of project management

The infrastructure construction project is a long-term work that takes the environment as the working object, human, material, and financial resources as the conditions comprehensively use various scientific and technological means, and has relatively large investment cost, so as to obtain as much economic value as possible. It is a complex process of the project inspection and implementation to the final completion, and its final value is related to a large number of uncertain factors such as environment, engineering technology, politics, economy, and culture. In the process of international infrastructure project development, decision-makers and managers deal with a large number of uncertain phenomena all the time. Different international projects have many different characteristics, which are mainly characterized by high risk, long time, and cross-region.

1) High comprehensive risk.

Infrastructure construction is the embodiment of a country's comprehensive national strength and has a linkage effect of economic value. These factors will undoubtedly speed up the attention to international project cooperation, but also increase the cost of investment. Infrastructure projects development from input to output goes through a long and extremely complex process. In this process, dozens of disciplines are involved, the comprehensive degree of some engineering disciplines is often unprecedented, and the application of the required high technology in actual production is not common. If there is a little experience that can be used for reference and the investment is large, the risks will be great. Long payback period

2) The payback period of international infrastructure projects is long.

It usually takes decades, or even hundreds of years to recover the investment from project inspection to completion. For example, the investment recovery time of the British French undersea tunnel may reach 1000 years, according to the prediction of some experts [5].

Economics

3) High uncertainty

Some projects, which rely heavily on the existing human technology level and expert ability to control knowledge, are difficult to predict the final results. All kinds of parameters and existing theories have their own uncertainties, so the uncertainty of the results of calculating resources based on these parameters is even greater, especially for some international cooperation scientific research projects, the results and value can not be measured in the short term, and the risk is obvious.

4) Regional risk

Some infrastructure construction projects are carried out in underdeveloped areas. Due to the poor regional environmental conditions, the preparation time is long, and the relative cost increases. It also increases the risk of investment. In addition, cultural differences in different regions are more likely to cause cultural conflicts, which increases the risk of international cooperation projects.

5) High political risk

At present, the trend of global cooperation project resource sharing is more and more obvious. In the past, more developed countries participated in international high-tech projects, but now some developing or less developed countries, such as central Africa, eastern Africa, and Eastern Europe, are also trying to provide opportunities for cooperation and construction. Infrastructure construction is the basic industry of a country, which has a significant impact on the national economy. It is a venture capital that governments and companies are willing to develop, the development of the Beijing-Moscow high-speed railway by the Chinese and Russian governments is an example. However, there are great differences in political systems, political stability, and policy continuity among countries, which often affect the success or failure of international cooperation infrastructure projects.

4. Frontier analysis of international project management - Beijing to Moscow high-speed railway project

In 2015, Russia and China jointly put the Beijing-Moscow high-speed railway project on agenda, this project is the first high-speed railway in Russia, is the longest high-speed railway line in the world, and the largest engineering project in the history of Russian-Chinese economic and trade cooperation. The complexity of the project is high, the cost is high, the life cycle is long, and there are many uncertain factors. Therefore, project management is particularly important to infrastructure project construction. For such major international cooperation projects, the correct level of risk analysis sometimes determines the future trend of all projects, and risk management is essential in all aspects of the project.

The project plans to cost the US \$237 billion, about 1.5 trillion yuan, reducing the transportation time of Beijing to Moscow from six days to 38 hours. The mainline is the route passing through Kazakhstan, with a total length of 6089 km, of which 2366 km is in Russia and the starting station is in Urumqi, Xinjiang, China. The construction schedule is shown in Table 1 [4].

Table 1. – Construction Progress of “Beijing-Moscow High-speed Railway”

Construction Segment	Construction Period
Moscow - Kazan	2018 - 2024
Kazan - Ekaterinburg	2020 - 2026
Ekaterinburg - Chelyabinsk	2021 - 2025
Chelyabinsk - Dostyk	2020 - 2027
Dostyk - Urumchi	2023 - 2027

In the high-speed railway construction cooperation project, there is a need to deal with the economic aspects, such as the price fluctuation of the building materials market, the fluctuation of the global financial market, foreign exchange, and the inflation rate. Risk control of contract terms is also really significant. Technical aspects, such as to control the risk of insufficient technical capacity of the contracting enterprise. Feasibility studies decision-making aspects, such as return on investment calculation risk control, etc. All these risk prevention and control are the premise and guarantee to ensure the smooth implementation of the project, and also the top priority of project management.

5. Future improvement space of international project management -- pre control and post evaluation

The prior control of project management mainly contracts risk management and the establishment of the risk assessment system. International engineering management is essentially the management of contracts. Besides the management of internal staff and internal cost control, all other related work is also a part of contract performance. Nowadays, FIDIC contract, yellow book, silver book, and red book are the most popular contract templates abroad. It agrees on rights and obligations for owners, consultants, and contractors. When signing the confirmation contract, the project management Party B and the owner Party A shall repeatedly communicate the

contents of the contract item by item. Among them, the risk-sharing regulations are particularly concerned, and the risk problems that are perceived in advance should be avoided. The advance payment method of reducing enterprise funds and related equipment can be included in the price adjustment formula for the contract and the compensation formula for exchange rate loss. In this way, the cost change caused by price rises and exchange rate change in the process of project implementation can be avoided, and the risk can be reduced [6]. The amount of contract transaction is an important prerequisite that directly affects the cost of project implementation. Therefore, the budget evaluation of cost price must be carried out before the initial stage of contract signing, and attention must be paid to it. According to the characteristics of different projects, the risk is estimated and the risk prevention and early warning system is established.

In the progress of a project, it is necessary to coordinate cost control, process progress control, and project quality supervision. After the project is mainly the project maintenance and effective evaluation of the project value. The basic data such as the total investment, financing source, product cost of each year, profit distribution, and loan repayment plan for the production period shall be collected and sorted out. Financial and economic activity statements should be prepared separately for financial evaluation and value evaluation. This work is essentially to analyze the financial and economic activities after the completion of the project, so as to reveal the law of financial and economic activities of the project in the calculation period. Financial evaluation and project national economic evaluation should also be carried out to evaluate the economic value of the project through the comprehensive analysis of the economic benefits of the construction project enterprise and the national economic benefits. As an international cooperation project case, it can provide reference to future international infrastructure construction.

6. Conclusion

Through the improvement and upgrading of project management, it is possible to make it can provide better service and be applied to large-scale international cooperation projects, which plays a driving role in improving project success rate, efficiency, and cost-saving. Meanwhile, through the analysis and summary of more cooperative projects, it could be possible to enrich the theoretical results of project management and promote the practical application of project management in the future.

At present, the practical application of project management has been very extensive in China, which has relatively strong control over large-scale international projects. However, compared with the international advanced management level, there is still a gap. Only by constantly learning advanced management technology and summing up advanced management experience can the relevant management team be more competitive in the future international market.

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