Information-Based Risk Management for Overseas Projects: Postprint

Authors: Hu Kailin

Date: 2017-11-06T00:00:00+00:00

Abstract

The new pattern of global economic development, the new normal of China' s economic development, and the new frontier of the "Belt and Road" initiative represent an inevitable strategic choice for Chinese construction enterprises aspiring to expand overseas to intensify their deployment in overseas markets and cultivate them with precision. Given the unique characteristics of overseas construction markets—including the political and economic environments of host countries, policy barriers and protective measures, legal and cultural disparities, divergent practices in international project operations, and numerous uncertainties—overseas projects are confronted with multifaceted risks. This paper expounds upon the analysis of various risks associated with overseas projects for construction enterprises from an informatization perspective, investigates their underlying causes, and proposes preventive measures and mitigation pathways.

Full Text

Vol. 8 No. 1, February 2016

Information-based Risk Management of Overseas Projects

(International Engineering Department, Yunnan Construction Engineering Group Co., Ltd., Kunming 650501)

Abstract: The new development structure of the world economy, the new normal of China' s economic development, and the new battlefields of the "One Belt, One Road" strategy make it an inevitable choice for Chinese construction enterprises to intensify their overseas market layout and cultivate overseas markets meticulously. Given the particularity of overseas construction markets—which involve the political and economic environment of host countries, policy barriers and protections, legal and cultural differences, different international

project operations, and numerous uncertain factors—overseas projects face various risks. This paper analyzes various risks for overseas projects of construction enterprises from an information-based perspective, explores their causes, and proposes preventive measures and approaches.

Keywords: Overseas Projects; Construction Industry; Capacity-cutting; Information Technology; Risk Management

After more than 30 years of reform and opening up and the tempering of the market economy, China' s construction industry has become a fully competitive market, giving rise to a number of large-scale, powerful leading construction enterprises. With China's economic development entering a new normal and the growth of the construction industry slowing down, it has become an inevitable choice for construction enterprises to accelerate their overseas market layout and actively explore new business growth points. However, overseas construction markets pose higher risk levels, more complex risk types, and more frequent risk changes than domestic markets. Therefore, how to effectively prevent risks, enhance risk prevention awareness, establish a sound risk management system, and improve risk prevention capabilities is a wise choice for every enterprise aspiring to go global.

2 Risk Classification for Overseas Projects

The core of risk prevention for domestic construction enterprises mainly lies in project management. However, risk prevention for overseas projects extends beyond the project itself, with a larger and more complex scope. The main risks fall into two major categories:

2.1 Environmental Risks

These mainly include political, economic, social, cultural, and legal risks. Such risks rarely occur or are not prominent in China, but they are relatively normalized in overseas markets and must be faced and addressed by many enterprises going global. This is precisely the weakness of numerous domestic construction enterprises.

First is political risk. Changes in government or ruling parties in host countries, political instability leading to social unrest or even war and turmoil, pose serious threats to company operations and employee safety. For instance, in 2011, China had 50 large-scale contracted projects in Libya with a total contract value of US$18.8 billion. The political turmoil and civil war in Libya forced the evacuation of Chinese enterprise personnel, causing substantial impacts on project progress and the business operations of Chinese enterprises.

Second is economic and exchange rate risk. Global economic slowdown, economic setbacks in host countries, high government debt, shrinking investment in local construction markets, or government adjustments to foreign enterprise and labor policies to protect domestic businesses or workers can hinder project

implementation, cause capital shortages, and create difficulties in performance. Most overseas contracted projects are located in Africa, Myanmar, Sri Lanka, Pakistan, and other countries with imperfect political and economic systems, where local currencies are "soft currencies" that frequently experience significant fluctuations, creating substantial exchange rate risks for enterprises.

Third is the risk of cultural and religious conflicts. Inadequate understanding of local religions, cultures, and customs, or incompatibility or conflict between project staff behavior and local public values and behavioral norms—such as failure to respect local customs and beliefs—can trigger disputes.

Fourth is legal risk. Insufficient understanding of local laws and regulations may cause companies to violate local legal provisions in their daily operations, resulting in fines, losses, or even work stoppages.

2.2 Project Operation Risks

First is inadequate understanding of local general contract terms and the application of domestic habitual project operation methods. To win projects, some enterprises even bid below cost, planning to claim compensation after contract signing. This approach results in contractual and cost risks for projects.

Second is inadequate understanding of local technical standards and specifications without sufficient analysis. Familiar domestic construction standards may not be universally accepted internationally, leading to technical and performance risks for projects.

Third is insufficient preliminary project investigation, inaccurate technical solutions, inadequate resource allocation, and incomplete consideration of adverse factors. During the early stages of project operation, many ideal factors are often assumed. However, after winning the bid and commencing construction, the difficulties and adverse factors encountered prove far more serious and complex than assumed, increasing project implementation risks.

Fourth is constraints from local objective conditions during project implementation, such as difficulties in demolition, delayed government funding, and interference from local labor unions, which affect performance.

Fifth is failure to study, analyze, or plan for project operation models, requirements, and details. Inadequate preparation or incomplete consideration triggers project implementation risks.

3 Our Countermeasures and Solutions

Therefore, for domestic construction enterprises to go global and undertake overseas projects, they must carefully prepare in the early stages. A series of questions must be addressed: how to fully apply domestic project management experience to achieve project controllability, how to leverage competitive advantages to go global, how to utilize modern information technology to strengthen

project management, and how to innovate management models and methods to achieve risk-controllable project profitability. Among these, the most important is to establish a sound risk management system, including risk management strategies, risk financing measures, organizational functional systems for risk management, risk management information systems, and internal control systems, thereby achieving risk management objectives and ensuring smooth project implementation. To this end, every enterprise going global needs to accomplish the following aspects:

3.1 Establish Organizational and Institutional Guarantees

Enterprises going global need to establish specialized overseas project management organizations, clarify corresponding job responsibilities and management processes, formulate risk management measures, and establish and improve relevant management systems. Risk databases should be created for both environmental risks and project operation risks, with corresponding emergency response plans formulated. Multi-level and comprehensive risk assessments should be conducted during the initial, middle, and later stages of project operation, including project environment evaluation, client evaluation, and project self-evaluation. Monitoring mechanisms should be established, and management decisions should be implemented step by step according to different risks at different stages, thereby enhancing enterprises' risk awareness and management capabilities.

3.2 Organize Professional Project Management and Support Teams to Provide Professional Guarantees

Generally speaking, for projects in an overseas region, a professional team should be formed according to regional characteristics, comprising experts in construction technology management, business management, legal management, and external coordination communication that are aligned with international standards. This team provides professional management and support services for overseas projects, offering assistance for emergencies and disputes during project implementation. It also provides research support, implementation management, and decision-making assistance throughout the pre-, mid-, and post-project phases.

3.3 Provide Design and Technical Guarantees

Based on the concept of value output, enterprises should improve service skills and technical levels, enhance their own capabilities, and take the lead in design and technology while strengthening advantages and emphasizing output. This enables them to gain the initiative in various disputes and improve their ability to transfer risks. They should fully utilize their own advantages to effectively transfer and circumvent risks related to materials and technology through contract management, truly leveraging their construction technical and management strengths to minimize project operation risks.

3.4 Strengthen Contract Management

This involves pre-event avoidance, in-event response, and post-event remediation. First, enterprises going global should strengthen their research on the content and format of FIDIC clauses, thoroughly understand local laws, regulations, and implementation procedures, establish risk point databases, and train project team members to be well-informed. Second, they should conduct simulated risk identification for risk points during contract execution, assess the degree of risk harm, accurately define risk severity, and ensure risks are controlled. During contract management, several key risk issues must be addressed: first, the allocation of exchange rate risk in contracts; second, issues where the contract stipulates that main materials are supplied by the client but the client fails to supply them in a timely manner; third, issues where the client unilaterally changes measurement procedures, cycles, and payment ratios without following contract requirements; and fourth, issues concerning the bearing of interest due to delayed payments by the client.

3.5 Focus on Risk Control During Project Construction

Currently, China' s overseas projects fall into two categories: one is foreign aid projects, which implement Chinese standards and specifications, use Chinese supervision and clients, and are politically significant projects. Except for stricter requirements on personnel qualifications and equipment plans that need approval from the Ministry of Commerce, other construction management methods are consistent with domestic practices. The other category includes cash, export credit, and government framework projects, which fully implement FIDIC clauses and British standards and specifications. There are significant differences between their technical standards and domestic management models. For example, design drawings are often conceptual only, and the contractor must optimize the design and obtain approval from the supervising engineer before construction can proceed.

Another example is the inspection and acceptance procedure. In China, construction typically proceeds first, followed by filling out inspection documents for supervisor signature. However, overseas projects have strict implementation procedures with specific requirements for submission timing and materials. Any violation may lead to a complete work stoppage the next day.

Yet another example is material and equipment procurement. Due to different geographical locations, material and equipment prices vary significantly. It is necessary to research local and neighboring countries' material and equipment markets and prepare detailed procurement plans to avoid project delays due to untimely supply, which would result in breach of contract risks and interest payment risks.

3.6 Fully Utilize Mature Project Management Concepts and Methods from Domestic Projects, Strengthen Information Application, and Strengthen "Internet Plus" Application

In response to the risk points and countermeasures described above, an internal risk information management platform should be established through information technology. As shown in Figure 1, this involves all business functional modules of the project management and control platform, with dedicated risk management modules built for risk control and knowledge management modules constructed, along with functions including message reminders, process management, and risk early warning.

As shown in [Figure 2: see original paper], contract management risks. The system has achieved management of various contracts (specialty subcontracting, labor subcontracting, procurement and logistics contracts, etc.), covering the entire process from contract review, signing, modification to settlement, realizing whole-process project contract management.

As shown in [Figure 3: see original paper], risk management based on the contract settlement process flow is established. According to the set procedures, initiated by the project department, reviewed by the regional office, and approved by relevant domestic departments and the chief economist, the system completes the payable review work for overseas projects in a timely and effective manner, thereby realizing settlement risk management.

(1) Establish overseas project development plans with item-by-item assessment and control, identifying and evaluating all "risk points" and establishing an overseas project emergency response knowledge base and procedures within the information system.

(2) Monitor the progress and cost control processes of overseas projects, while using information technology to predict and provide early warnings for abnormal project schedules and expenses, preventing schedule risks and cost risks.

As shown in [Figure 4: see original paper], cost management. The system imports budget results from Guanglianda or Excel to achieve budget cost import. Based on preset WBS and cost account settings, it realizes budget cost preparation, then prepares target costs according to management needs, and collects actual costs through project process management, ultimately achieving three-way comparison in cost management.

(3) Establish a strict supplier and overseas equipment and material price information database, while identifying and evaluating market price and exchange rate development trends, strengthening forecasting, and adopting various financial instruments (such as futures markets, hedging, etc.) for risk avoidance.

(4) Through integrated application research of Internet, IoT, cloud computing,

3S technologies, and other technologies in the construction process, using e-commerce bidding systems and logistics supervision systems to implement transparent procurement and real-time logistics tracking, enhancing risk control capabilities in the project material procurement process.

(5) Research local labor employment policies, establish a complete labor employment risk system, a database of qualified project subcontractors and labor personnel (including local labor personnel), clarify risk control points, and improve risk control capabilities in the labor employment process for overseas projects.

In conclusion, it is inevitable for China' s construction industry to go global. The international construction industry is undergoing transformation from contractors to value chain integration and innovation, from single resource supply to global resource integration and sharing, and from traditional management to the integration of modern information technology and modern management. Large multinational construction enterprises using information technology and modern management methods can achieve global resource allocation with higher efficiency and lower costs than traditional management methods, better avoiding, preventing, and resisting risks to survive and thrive. This is the only path for every enterprise entering overseas construction markets to grow and develop.

References

[1] Guo Zhongwei. Risk Analysis and Decision[M]. Machinery Industry Press, 1987.
[2] Zhao Shuming. International Enterprise Risk Management[M]. Nanjing University Press, 1998.
[3] Lei Shengqiang. International Engineering Risk Management and Insurance[M]. China Architecture & Building Press, 2002.
[4] Shen Jianming. Project Risk Management[M]. Machinery Industry Press, 2004.
[5] Mo Qiwen. Risk Analysis and Evaluation Methods for International Engineering Contracting[J]. Chinese and Overseas Architecture, 2006.
[6] Chen Zhihua, Yu Haifeng. Research on EPC General Contracting Project Risk Management[M]. Southeast University, 2006.
[7] Qing Yao, Wang Yueming. Review of Research on Engineering Project Risk Management in China[J]. Sichuan Building Science, 2007.
[8] Jie Xuchu. Building a 360-degree Risk Prevention and Control Network for Overseas Projects[J]. Construction Enterprise Management, 2015.

Information-based Risk Management of Overseas Projects

Hu Kailin
(International Engineering Department, Yunnan Construction Engineering Group Co., Ltd., Kunming 650501, China)

Abstract: Due to the new development structure of world economy, the new normal for the development of Chinese economy and the new markets for the "One Belt, One Road" strategy, it is necessary for Chinese enterprises to further expand and cultivate overseas markets. However, overseas projects have to face all kinds of risks because of such uncertain factors as political and economic environments, policy barriers and protections, legal and cultural differences and different international project operation procedures. Based on information technology, this paper analyzes various risks for overseas projects of building companies and puts forward prevention measures and approaches.

Key Words: Overseas Projects; Building Industry; Capacity-cutting; Information Technology; Risk Management

Note: Figure translations are in progress. See original paper for figures.