Case Study

Applying Risk Management Workshop for a Public Construction Project: Case Study

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Abstract: The selection of proper risk management tools and techniques is critical for better decision-making. Because very few studies scrutinize the use of a workshop as a risk management approach, this paper aims to explore how a risk management workshop can be effectively used in managing project risks, by studying a risk management workshop that was conducted in a public project. An in-depth case study approach was adopted to identify the benefits and challenges of this method of risk management. The subsequent performance of the public organization in managing risks was examined by evaluating its functional risk management implementation. In addition to furthering an organization’s understanding of major project risks, a risk management workshop also provides opportunities for team building. However, a breakdown in the risk communication that eventually resulted in a poor risk management implementation was uncovered in the implementation of the project. Continued efforts to improve risk management implementation are needed to overcome the shortcomings associated with the current practices. DOI: 10.1061/(ASCE)CO.1943-7862.0000599, © 2013 American Society of Civil Engineers.

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Introduction

Risks are unavoidable in the dynamic construction industry (Akintoye and Macleod 1997; Tar and Carr 2001; Forbes et al. 2008). Construction risks need to be proactively managed if the objectives and targets of a construction project are to be achieved. Risk management (RM) has been accepted as an important approach to making better decisions (Han et al. 2008). RM can help reduce the likelihood of potential threats and their possible effects, and can also maximize the likelihood of opportunities [Project Management Institute (PMI) 2004]. An effective risk management application can turn downside risk to upside risk, thus enhancing the performance of the project and the organization.

Several RM processes proposed by professional bodies and researchers appear in the literature [Perry and Hayes 1985; Chapman 1997; Ward 1999; Tar and Carr 2001; Tummala and Mak 2001; PMI 2004; Australian/New Zealand Standards (AS/NZS) 2004; Taylor 2005; Han et al. 2007]. Due to the importance of RM, professional bodies have introduced systems to overcome problems in its implementation. For example, project risk analysis and management (PRAM), promoted by the Association of Project Management (APM), comprises nine steps: define, focus, identify, structure, ownership, estimate, evaluate, manage, and plan (Chapman 1997). On the other hand, PMI (2004) introduced an RM framework with five steps: risk planning, risk identification, risk analysis, risk response, and risk monitoring and control. At the same time, AS/NZS (2004) also presented an RM process that includes establishing the context, identifying, analyzing, evaluating, treating, monitoring, and communicating risks. Regardless of the variations in specific RM processes, they generally always include risk identification, risk analysis, and risk response. RM should be applied at all stages in the life cycle of the project in a systematic and comprehensive manner to realize its full benefit. It is also important to properly select RM tools and techniques for a successful risk management implementation.

Tools and Techniques used for RM

A wise use of proper tools and techniques can add value to the performance of RM in delivering project objectives. A wide range of tools and techniques is available for managing risk in the construction and engineering industry. As shown in Table 1, many studies have investigated the application of these tools and techniques in the construction and engineering industry, including those by Akintoye and MacLeod (1997), Ward (1999), Wood and Ellis (2003), Lyons and Skitmore (2004), Simister (2007), Dikmen et al. (2008), and Forbes et al. (2008). The most common tools and techniques are checklists, brainstorming, probability impact matrices, subjective judgement, decision tree analyses, sensitivity analyses, and Monte Carlo simulations.

Selected RM tools and techniques must fit with allocated resources and must also be aligned to project objectives. One technique may not always be appropriate for every situation (Lyons and Skitmore 2004; Forbes et al. 2008), and one technique may not be applicable for every phase of an RM process. Although many tools and techniques are available, a review of the literature revealed that only few tools and techniques are actually used in the construction industry. Lyons and Skitmore (2004) found that the most common risk identification techniques are brainstorming, case-based approaches, and checklists. Subjective judgment, intuition, and experience are often used in assessing and analyzing risk (Akintoye and MacLeod 1997; Lyons and Skitmore 2004).