Risk Management Instruments, Strategies and Their Impact on Project Success

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ABSTRACT

Risk is an inseparable event or occurrence to any project and it is a consequence of uncertainties and unknowns associated with the project and its execution. Past research studies generally focused on types of risks and risk management processes. This research effort, using a survey questionnaire, is an attempt to understand types of specific risk mitigation approaches that are commonly employed and their dependency with the type of an organization. This research effort also addressed relation between risk mitigation strategy of an organization and individual project manager’s propensity to risk. Research results show that project risk management plan and its development is likely to be influenced by cost and time aspects of a project but not on the project scope. Further, results revealed that many organizations depend on contingency budget rather than a formalized risk management plan.

Keywords: Contingency, Project Risk, Project Success, Risk Management Instruments, Risk Strategy

INTRODUCTION

Risk is generally seen as an exposure to a situation that leads to unfavorable outcome. However, a project risk is an occurrence that can be either positive or negative. If left unaddressed or ignored, specifically, the negative risk, it could potentially interfere with the successful completion of the project and may result in time and cost overruns.

The project manager and the team can avoid pitfalls during project execution by identifying risks, and then analyzing and developing strategies for minimizing the impact of risk during the project planning phase.

Project risk can occur from two sources; first, uncertainties and unknowns associated with the project, and second, actions of people who are either directly or indirectly involved with the project. By definition, a project is a new endeavor and thus, risk is inevitable due to uncertainties and unknowns associated with it.

What makes it challenging to deal with risks is that uncertainty is inherently a difficult topic; it can be computationally overwhelming (Elmaghraby, 2005). Thus, simplified models

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are usually used to estimate risk such as Program Evaluation Review Technique (PERT) or Expected Monetary Value Decision Trees (Strang & Symonds, 2012).

Needless to say, project managers must recognize that risk is integral to project and will have to make sure that a good risk management plan is in place. As such, risk management is included as one of the knowledge areas of project management book of knowledge (PMI, 2008) wherein several processes for managing risk are defined.

Past studies have identified additional risk management processes and tools (Carbone & Tippett 2004; Cates & Mollaghasemi, 2007; Cervone, 2006; del Caño & de la Cruz, 2002; Goodwin & Strang, 2012). Risk management is not something that project managers should do in addition to project management duties; rather it is something that must be done as part of their project management duties (Powell & Klein, 1996).

**Problem Statement**

Past research efforts focused mostly on types of risks and risk management processes; these studies did not address what types of specific risk mitigation approaches are commonly used and how such choices are influenced by the type of an organization and an organization’s and individual project manager’s propensity to risk.

This research is an attempt to identify commonly used risk mitigation approaches for different types of organization as they would help project managers to understand cultural and behavior issues that are not often addressed while developing project risk management plans. Further, this research effort aims to find out how risk is managed in projects, and how it varies depending on the type of industry and the organization with the hope that these results serve as useful information leads for project managers while developing risk management strategies.

The paper is organized as follows. In the next section literature review of past research studies related to risk management is presented. Findings of the literature review were used to design a research questionnaire, which is discussed in the following research method section. Results of the survey of more than one hundred project management professionals are analyzed and key findings of the study are presented in the analysis and discussion section. Finally conclusions, limitations of the study and suggested future research efforts are presented in the concluding section.

**LITERATURE REVIEW**

Each project is unique to its own collaboration and locations (Camprieu, Desbiens & Feixue, 2007). Consequently, associated project risks are likely to vary depending on the type of project, industry in which it is managed, previous experience in managing similar projects, and how effectively it is managed, and the scope and size of the project.

Likewise, sources for risks are different with international projects because of difference in locations, political issues, regional issues such as language and culture, and social issues. Added to this complexity is virtual environment in which a project is managed (Lientz & Rea, 2003; Chan & Tse, 2003; Oertig & Buergi, 2006; Lee-Kelley & Sankey, 2008). Risks in international projects are classified into various categories such as political, cultural, technical, and environmental (Steffey & Anantatmula, 2011) types that can assist management in choosing appropriate risk strategies (mitigation, transfer, avoid, and accept) to deal with the riskier endeavors.

With reference to software projects, Kwak and Stoddard (2004) suggest that intrinsic risk in a software project is due to its inherent creation of something new, despite the fact that the process of creation is often similar for all projects. This uniqueness coupled with unknown aspects of its results associated with cost and schedule overruns, and issues such as quality and usability. However, creating something new is not necessarily unique to software projects alone. By definition, all projects are new and therefore, inherent risk is present in all types of projects; however, the impact varies depending

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