

## Chapter 76

# Systematic Review of Risks in Domestic and Global IT Projects

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### ABSTRACT

*The development of information technology projects is no longer limited to the domestic sphere. This study identifies the differentiation of risk categories between global and domestic projects through an exploratory research carried out by means of a systematic literature review. 1367 risks were identified in 37 articles and classified within 22 categories. The major concern regarded in domestic project management was the client (external risk) and scope (internal risk) and, in global project management, the psychic distance (external) and coordination and control (internal). The main difference between the risk categories for each project type refers to the psychic distance category, which was identified almost exclusively in global projects, thus making the external risks more relevant than those in domestic projects. On the other hand, it makes risks such as client, supplier and stakeholders be underestimated. The results indicate that project managers should focus on different risks depending on the type of IT project: global or domestic.*

## **INTRODUCTION**

In order to gain competitive advantage, organizations use globalization for developing IT projects, introducing new challenges that are peculiar to this type of project. The characteristics of global projects are geographically dispersed teams, having members with different cultures and enabled by the IT infrastructure (Lee-Kelley & Sankey, 2008). There are many differences between the attributes in domestic and global projects. While domestic projects involve a single or limited number of organizations, global projects have multiple organizations and departments involved, each with their own different interests and cultures. While legislation is known and well understood in domestic projects, in global projects the comprehension is difficult and needs interpretation (Lientz & Rea, 2003).

Global Information Technology [IT] projects aim at assisting organizations to quickly meet their demands (Sommerville, 2015). Technology dependence is a characteristic of IT projects that generates uncertainty during execution, producing a high level of failure among organizations (Sausser, Reilly, & Shenhar, 2009). Uncertainties in the projects can impact positively or negatively the objectives of the projects (PMI, 2012). The knowledge area within project management [PM] that handles risk in a systematic way is the Risk Management [RM].

Many studies focus on the risks in domestic IT projects regarding information systems (Hwang et al., 2016), software (Jiang & Klein, 2000), Enterprise Resource Planning [ERP] (Sumner, 2000) and Outsourcing (Bunker, Hardy, Babar & Stevens, 2015). Other articles focus on the risks of global IT projects related to ERP (Aloini, Dulmin, & Mininno, 2012), outsourcing (Kliem, 2004) and software (Perrson et al., 2009; Verner, Brereton, Kitchenham, Turner & Niazi, 2013). However, few studies look into the difference between the risks in both of them. The exception was Nakatsu and Iacovou (2009), who, nevertheless, focus on the main risk factors in outsourcing projects.

This situation leads to the following question: “What is the difference between the categories of risks commonly presented in global and domestic IT projects?” This question will be answered through a systematic review of literature in order to recognize such distinction and generate a complete list of risk categories. The results of this research will produce practical implications for IT managers, who should be aware of what the main risk categories are and how to manage them. With the evolution of organizations and globalization, a manager of domestic IT projects may be required to manage a global project without notice, and might need help to deal with the situation at hand.

## **CONCEPTUAL BACKGROUND**

IT projects are classified into system and infrastructure development projects. In the former, delivery is a computational system. In infrastructure projects, on the other hand, deliveries are related to servers, communications, and other several possibilities, thus having specific risks for each type (Sommerville, 2015). In this study, we will focus on computational systems. It is common to use offshore teams in this type of project (Kliem, 2004), constituting what is known as a global project, which uses distributed teams (Ebert, 2011).

Global projects are those that involve individuals, teams, groups and organizations from multiple locations (Lientz & Rea, 2003), cultures and business units and functions (Anantatmula & Thomas, 2010). There are unique challenges in this new context, such as language and communication barriers, cultural differences, distributed teams, and different government regulations from one country to another. The

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