Chapter 35

Addressing Risks in Global Software Development and Outsourcing:
A Reflection of Practice

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ABSTRACT

This article describes how outsourcing and offshoring for software development is a widely used business strategy implemented by many organizations worldwide. Due to its significant benefits, project managers can accrue greater flexibility, lower labor costs, and have access to skilled workers, which are the advantages of outsourcing and offshoring in global software development (GSD). Though there are advantages and benefits to incorporating this business practice, there are risks associated with it as well. Therefore, it is necessary and vital to discuss the challenges and risks that may arise which the project managers should consider before establishing and implementing such a project, to ensure a successful project result. The objective of this research is to identify the challenges and risks involved in GSD and discuss a risk management plan based on these factors. This article has found that communication issues and cultural differences are primary causes of most risks identified. To minimize the risks associated with GSD, these factors must be minimized.

1. INTRODUCTION

1.1. Background

Due to the advancements made in technology and its expanding worldwide use especially in the field of software projects, there has been an increasing trend in using global software development (GSD) by many companies. The term global software development emerged as a concept that is defined as "…software development that uses teams from multiple geographic locations…" Nidhra Yanamadala,

Afzal, and Torkar (2013). Verner, Brereton, Kitchenham, Turner & Niazi (2014) states that GSD is used to describe a software development business strategy where "…organizations shift all or part of their software development to another country (referred to as offshoring), to lower cost destinations and/or to destinations where the required skills are more readily available." An example of GSD is when multinational organizations distribute their software development activities across multiple subsidiary sites (Verner et al., 2014). Many of these sites are located in different countries. Distributed software development (DSD), distributed software engineering (DSE), and global software engineering (GSE) are other terms used to describe this same software development business strategy (Verner et al., 2014). For simplicity, the term GSD is used throughout this paper.

In businesses that utilize GSD, teams that are located in different geographic locations perform the software development work tasks. The distribution of these software development activities to other teams in another location is increasingly becoming a common practice recently. However, there are risks involved when managing a GSD project due to the teams being located in separate locations. The risks that can be encountered include organizational, cultural, temporal, language, political, and geographical barriers. These barriers that can arise when managing a GSD project present as risks.

Software outsourcing refers to the method in which part of the software development work task is allocated to another team in a different location. The benefits obtained from software outsourcing, which are cutting costs and increasing efficiency, can help companies, maintain their competitive advantage in the field. This advantage is the driving factor for incorporating the use of this software development business strategy for GSD. However, the benefits associated with GSD will not be attainable if the risks involved with GSD are not managed during the life cycle of these projects (Verner et al., 2014). But, if project management account for these risks to be managed correctly, offshore software development can produce high-quality work and product that is beneficial for the software organization. Evidence from research and literature portray the risks and challenges of managing outsourcing and offshoring in GSD projects.

This study identifies and analyzes the risks associated with outsourcing and offshoring in global software development projects. This paper is organized as follows. Section 2 describes the literature review to summarize and synthesize literature analyzed in this paper. Section 3 describes the research methodology used in the study. Section 4 presents findings from the selected literature, which are presented and analyzed with the discussion. Lastly, Section 5 addresses conclusion, future work, limitations, and risk assessment.

1.2. Problem Statement

There is a wealth of literature that shows the crucial role that risk plays in software development projects. However, there is an evident gap in knowledge regarding how risk enables the smooth progression of software development projects. This research stems from the knowledge gaps that exist within the related literature on global software development projects and risk management. The focus of this article is to evaluate the elements and applications of the most current risk management in the area of global software development projects. The article seeks to examine the overlaps and disparities of these risks in order to understand the differences and similarities between them. From there, this study seeks to propose solutions that encompass the best practices and elements of the current arguments in order to outline a proposed "universal" framework that could applicable to all forms of global software development projects and to all industries/business sectors. The research will focus on providing evidence-based answers

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