

Chapter 83

Risks Management in Agile New Product Development Project Environments: A Review of Literature

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ABSTRACT

This article reviews the risks associated with the implementation of Agile Project Management practices in projects that involved new products development in manufacturing companies and identified according to existing research the best strategies to approach those risks. Further, this article analyzes the events that can affect the implementation of APM practices in projects that involve the development of new products within manufacturing companies and provides some strategies to mitigate, avoid, and minimize the likelihood if they become risks and its impact in the customer requirements. Principal risks in manufacturing companies were highlighted, and its probability and impact were evaluated regarding scope, quality, schedule, and cost. Risk responses and strategies were noted align with the purpose of the agile practices, which is to deliver innovative products quickly and with high-quality standards.

1. INTRODUCTION

1.1. Background to the Topic

Nowadays, manufacturing companies, same as other industries, are looking to improve their production processes to respond quickly and efficiently to the constant changes in the marketplace and therefore, meet the customer requirements by developing innovative products. However, there is a need to implement new methodologies to supersede what traditional approaches have not been able to enhance.

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Thus, there is where the Agile Project Management (APM) plays a significant role because it offers new methods and practices to approach projects that involve new product development. The APM methodology was initially designed to improve the performance of projects in software development companies (Denning, 2016; Leite & Braz, 2016; Flumerfelt & Kahlen, 2015). In 2001, a group of people that worked in software development projects created the Agile Manifesto (Agilemanifesto.org, 2001). This manifesto works as a guide for the implementation of the APM and contains four values and twelve different practices to follow for the success of the methodology, and that will be critical factors for the development of this research (Agilemanifesto.org, 2001; Stoica, Ghilic-Micu, Mircea, & Uscatu, 2016). Furthermore, Leite and Braz (2016) explained the term agile as “the ability to respond to the changing market and take advantage of them,” meaning that companies can develop their projects by adding value to its outcomes by moving faster and efficiently in their industries. Then, some investigators analyzed how other sectors, different than software development, noticed the advantages that the APM practices offer to respond quickly to the changes in the customer needs and to develop products with high-quality standards and therefore, maintain their competitiveness in the market (Leite & Braz, 2016; Miller, 2013; Stoica, Ghilic-Micu, Mircea, & Uscatu, 2016; Flumerfelt & Kahlen, 2015).

Based on the analysis of some literature regarding APM and its performance in companies from different industries, it was identified that usually when businesses want to implement new methodologies to improve their project performances, there are always some risks associated with its rollout (Leite & Braz, 2016; Miller, 2013; Stoica, Ghilic-Micu, Mircea, & Uscatu, 2016; Flumerfelt & Kahlen, 2015; Denning, 2016; Conforto, Salum, Amaral, da Silva, & Magnanini de Almeida, 2014). For that reason, this paper aims to analyze, identify, and evaluate the primary risks associated with the implementation of agile practices in projects that involve the development of new products in manufacturing industries. As a result, the author presents some strategies that can be implemented to mitigate, avoid, eliminate or minimize the consequences derived from the risks if it should occur.

1.2. Study Objective

Companies need to meet the customer requirements quickly and effectively to be competitive in the marketplace. During the development of innovative products, companies see the implementation of the APM practices as a methodology that can help them to respond to the continual changes in the industry and therefore, to variations of the customer needs. However, the implementation of a new methodology often presents some events that if they should occur, it may impact the success of the projects. Therefore, this paper seeks to investigate what are the main risks associated with the implementation of Agile Project Management (APM) practices in new product development (NPD) projects within manufacturing companies.

1.3. Originality

The purpose of this study is to contribute to existing literature regarding the effectiveness of risk management in agile manufacturing environments. Moreover, it seeks to compare project risk management features with the agile project manufacturing environments by focusing on their assessment tools. Data is derived from different studies and combined in a well-mannered approach. This paper is based on original research conducted to check the hypotheses.

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