Chapter 68

Making Agile Development and Offshoring Practice Successful on Global Software Development Project

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ABSTRACT

Two significant trends have been gaining momentum in software development: the utilization of Agile development methodologies, and the continuing trend of companies to outsource development work off-shore. These two trends have changed the way companies develop software and business applications. This chapter seeks to evaluate how a company can successfully manage both trends in conjunction with each other on global business. The primary question addressed is whether the benefits derived from Agile development methodologies and the savings from outsourced software development efforts cancel each other out when applied together, or whether they create a synergy greater than the sum of the parts. In order to answer this question, this chapter intends to examine several relevant business practices and industry experiences. From lessons learned, we identify factors which seem to influence a successful combination of Agile methodology and offshoring in global software development projects.

INTRODUCTION

Companies have been adopting Agile development methodologies for a number of reasons, including shorter cycle times for delivering solutions, better team morale, better visibility, and more frequent interactions with business owners (Moe, Dingsoyr, & Dyba, 2009). Agile methodology helps companies deal with the unpredictable nature of development by focusing more on the people involved and less on the process employed (Pearlson & Saunders, 2010).

Companies have increasingly been moving software development works to offshore project teams. An obvious benefit of "offshoring" of development work is the dramatically lower costs. While companies can sometimes experience difficulty bringing international software development resources to the outsourcing countries such as United States, there appears to be no restrictions on the amount of software development work a company can send overseas (Battin, Crocker, Kreidler, & Subramanian, 2001; Pearlson & Saunders, 2010).

The following sections include a review of recent literature on the Agile methodologies and offshoring software development, discussion on the effectiveness of Agile methodologies, analysis on various factors and issues of offshoring software development work. The final section concludes the research findings with implications and suggestions for future research of Agile methodologies and offshoring practices.

AGILE DEVELOPMENT

Jones (2006) identifies that among the 30 most significant issues in software engineering which have persisted and haunted software development companies for over 30 years are:

- Only 50% of all the customer's requirements are known at the initiation of the project
- Once development is underway, there is a 2% scope increase every month (scope-creep)
- A total of 20% of the initial requirements are postponed for implementation and delivery only in the next release
- Documentation is very expensive (2nd most expensive activity)
- New customer requirements for post-delivery applications grows every year

Organizations used to following a structured life cycle for software product development find themselves at a crossroads between quickly meeting customer demands and keeping tight control over the development process. The traditional model for software product development, commonly known as the Waterfall Development Model, provides a well-defined process for software development teams to meet customer requirements. However, this model has limited some organizations' ability to deliver on customer's expectations in a timely fashion.

The Agile software development model took shape when IS researchers started to challenge the assumptions of the Waterfall model. They take inspiration from Lean Manufacturing methods to tackle some of the major software development problems (Cohen, Lindvall, & Costa, 2004). The Agile development model yields great benefits to organizations seeking to provide iterative and incremental releases to their customers. There are multiple ways to attain agility. Many methods have been suggested in the extant literature after they have been implemented successfully in the industry. Among those proposed Agile models, Scrum and Extreme Programming are two of the most popular Agile development methods (Succi, & Marchesi, 2001; Marchesi, Succi, Wells, Williams, & Wells, 2003).

The concepts behind Agile were created by a group of developers who gathered to develop an enhanced method for software development (Abrahamsson, Salo, Ronkainen, & Warsta, 2002; Cohen, Lindvall, & Costa, 2004; Conboy, 2009; Highsmith, 2001; Highsmith & Cockburn, 2001). They believe changing software requirements is unavoidable in the software development process. The processes used to develop software should allow for flexibility in handling changes as early as possible (Sharp & Ryan, 2011). To accomplish this challenge, Agile methods categorize the work load into small manageable pieces labeled

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