

Implementing CMMI using a Combination of Agile Methods

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Abstract

This paper explores the possibility for software companies of getting a CMMI certification of their processes by applying agile practices. For this purpose, starting with CMMI maturity level 2 generic goals and practices, we analyze the applicability of a series of agile methods, identifying their individual or combined contribution in the fulfillment of each process area. The main result of this research is the definition of a “fulfillment delta” required for a small or medium size company to reach CMMI level 2 using agile methods. We present an application case where a small company applied a combination of XP and Scrum for implementing the requirement management area. We compare the theoretical fulfillment delta with this company’s results.

1 Introduction

Currently, the software industry represents an important economical activity for every country; it offers multiple possibilities for business and it promises to be a great opportunity for developing countries. In Latin American countries, software industry is generally immature, and companies face low productivity that threatens growth and increases the existing dependency with respect to developed countries. In spite of the comparative disadvantages, the Latin American software industry has grown lately, so the generation of strategies for developing the area would allow the countries to take advantage of the opportunity.

Software quality assurance through software process improvement and certification is one of the strategies software companies could engage with a two fold goal: the first one is to improve their international image, so that they can participate in a global market; the second one, the need to make their projects more efficient and effective administrative units.

One of the characteristics of Latin American software industry is that it is mainly formed by small and medium size companies. Several of these companies have chosen to apply agile methods in their software development processes basically due to the small initial investment required, and taking advantage of their personnel competitiveness. Nevertheless, provided that most software development standards and models have been created based on rigorous traditional processes and methodologies, it is necessary to define what new practices these companies need to accomplish in

