

A Framework to Compare Software Process Assessment Methods Dedicated to Small and Very Small Organizations

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Abstract
It is a challenge for small and very small organizations to adopt software process improvement models and the associated assessment methods to improve their software process. A number of customized assessment methods based on SPI models, such as CMM/CMMI and ISO 15504, have been proposed to fit the needs of such organizations. To help them select an assessment method relevant to their needs, this paper presents a framework to compare SPI methods dedicated to small and very small organizations?.

1. Introduction

Software products are the result of a development process; hence, software product quality is directly affected by that process. Based on the relationship between product quality and process quality, several model-based software process improvement (SPI) approaches (e.g. CMMI, ISO 15504 and ISO 9001) have been designed. The initiatives associated with these approaches all begin with an assessment of the organization's current processes. The results of this assessment provide data on the strengths and weaknesses of the organization's processes and provide guidelines with respect to which processes require improvement.

In medium-sized and large organizations, the division of activities and tasks among employees with distinct responsibilities is

much more visible than in small organizations, which have only a few people to carry out the full process. Most of the initial SPI models have therefore been developed instead based on observing and analyzing processes, which are more visible in these larger organizations. The SPI models are therefore easier to use in medium-sized and large organizations than in small and very small organizations with their highly uncoupled processes.

To adapt these models to fit the informal processes of small and very small organizations, a number of tailored SPI models have been proposed [1] [2] [3] [4] [5] [6] [7].

Small organizations fighting to survive and provide their customers with a working version of their products must address daily challenges, which leave them with little flexibility with respect to long-term planning: they must be highly agile and reactive, and they have little control over longer lead times. Therefore, any process assessment they conduct and any improvement process