Chapter 9

Agile Assessment Methods and Approaches

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ABSTRACT

Agile methods are widely used in software companies in recent years. Many software companies are replacing their traditional development methods with agile methods. Nonetheless, measuring agility that they have achieved has been a topic of debate. Software teams and companies need to know how agile they are or how much is the agility degree of their organization. Unlike traditional methods in software development, there is no standard or universal model (like CMMI) to measure maturity of agile teams and software companies. So far, only a few methods and tools have been proposed to measure the agility of software companies. The main aim of this chapter is introducing the structure and main features of the existing agile assessment methods and providing a brief discussion on drawbacks of these methods. This chapter tries to elucidate the actual position of agility measurement methods in measuring agility degree of companies who are trying to adapt to agile methods and practices.

INTRODUCTION

Agile methodologies emerged in software development due to prevent the inherent challenges of traditional methods and to offer some new values for developing working software. These values cover all the aspects of software development lifecycle including project management and development process. Migration from traditional to agile methods, which takes a huge time and effort, needs to be considered as an important issue because it can cause wasting time and money in software companies. So, those companies that are transforming to agile need to be aware about their situation in this transformation and make sure that they are in the right direction. Therefore, measuring the progress of agile transformation and adoption is considered as a helpful strategy.

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Measuring the agility of companies that is known as agile assessment has been a topic of debate in the literature. There are some studies that suggested some approaches to assess the agility level of software companies. Different scopes and techniques have been proposed to assess agility degree such as fuzzy approaches, multi-level structures, and some comparative approaches. However, there is no popular and standard assessment model regarding this issue. The aim of this chapter is to conduct a review on the existing assessment models and techniques and to show the advantages and weaknesses of them.

The rest of this chapter is organized as follows: Section 2 briefly describes agile transformation process. Section 3 presents a brief description of the agility assessment models. Section 4 provides a discussion on each method and mainly explains weaknesses of these models. Finally, Section 5 concludes the discussion and addresses a potential future work.

AGILE TRANSFORMATION PROCESS

After creating Agile manifesto (Beck et al., 2001), many software companies and engineers have been interested in adopting agile methods in their development process. Most of them found agile methods as a helpful solution to cope with the inherent problems of traditional methods including heavy documentation, late release, customer dissatisfaction, difficulty in changing requirements, lack of transparency, and management bottlenecks (Cohen, Lindvall, & Costa, 2004). Indeed, they considered agile methods as a reaction to traditional methods (Boehm, 2002).

Although agile methods officially have been introduced in 2001, prevalence of them started after 2005, when some of the famous software companies started their transformation and reported their success stories (Chung & Drummond, 2009; Laanti, Salo, & Abrahamsson, 2011; Schatz & Abdelshafi, 2005). However, only a few of them changed their development style in all projects and teams.

An important issue is that transitioning to agile is not an easy and smooth project. Rather, it needs enough time and effort (Gandomani, Zulzalil, Ghanı, & Sultan, 2013a, 2013b). There are many reports about introducing an agile method to a company in which the authors have explained the challenges, obstacles, hindrances, and problems they faced (Gandomani, Zulzalil, Ghanı, Sultan, & Nafchi, 2013; Gandomani, Zulzalil, Ghanı, Sultan, & Parizi, 2015). Based on these reports, most of the challenges are related to people and their role in agile methods (Conboy, Coyle, Wang, & Pikkarainen, 2011; Gandomani, Zulzalil, Abdul Ghanı, Sultan, & Sharıf, 2014). The rationale behind this is that, agile methods are totally different from traditional methods in terms of people and their roles in project management and software development (Cockburn & Highsmith, 2001). In this case, those who are adapted to traditional roles most often resist against new roles as agile methods expect (Gandomani, Zulzalil, Ghanı, Sultan, et al., 2013; Nerur, Mahapatra, & Mangalaraj, 2005).

Beside people-related issues (Gandomani, Zulzalil, Abdul Ghanı, et al., 2014), agile transformation is subject to other challenges including customer-related issues, tools and technology-related challenges, and so on (Gandomani, Zulzalil, Ghanı, Sultan, et al., 2013; Gandomani, Zulzalil, & Nafchi, 2014; Nerur et al., 2005). Obviously, such a challenging process needs to be supported by appropriate enablers or facilitators (Gandomani, Zulzalil, Abd Ghanı, Sultan, & Sharıf, 2014).

Nonetheless, there are a few transformation models for moving to agile. However, none of them could not gain enough acceptance from industry and are subject to various challenges (Rohunen, Rodriguez,