

Chapter 6

Story Card Process Improvement Framework for Agile Requirements

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ABSTRACT

This chapter describes an ongoing process to define a suitable process improvement model for story cards based requirement engineering process and practices at agile software development environments. Key features of the SMM (Story card Maturity Model) process are: solves the problems related to the story cards like requirements conflicts, missing requirements, ambiguous requirements, define standard structure of story cards, to address non-functional requirements from exploration phase, and the use of a simplified and tailored assessment method for story cards based requirements engineering practices based on the CMM, which is poorly addressed at CMM. CMM does not cover how the quality of the requirements engineering process should be secured or what activities should be present for the requirements engineering process to achieve a certain maturity level. It is difficult to know what is not addressed or what could be done to improve the process. The authors also presents how can be the identified areas of improvement from assessment can be mapped with best knowledge based story cards practices for agile software development environments.

1 INTRODUCTION

Requirements elicitation process is one of the challenging processes in the software development methods. In traditional software development methods end users or stakeholders predefined their requirements and sent to the development team to do analysis and negotiation to produce requirement

specification. Traditional software development has a problem to deal with requirement change after careful analysis and negotiation. This problem is well tackled by the XP, which is one of the agile software development methodologies.

Extreme (XP) programming is a conceptual framework of practices and principles to develop software faster, incrementally and to produce satis-

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fied customer. It is a set of twelve practices and four principles, which makes XP successful and well known among all the agile software development methods. The goal of XP is to produce the software faster, incrementally and to produce satisfied customer (Beck, 2000). According to Bohem (1998) the cost of change grows exponentially as the project progresses through its lifecycle (Bohem 1981). The relative repair cost is 200 times greater in the maintenance phase than if it is caught in the requirement phase (Faluk, 1996). XP maintains the cost of change through iterative software development methods and Refactoring.

While CMM and CMMI or software process improvement has gained a lot of attention during the last decade. Due to the increasing competition in the software market faster delivery, high quality products and customer satisfaction are the major concerns for software organisations. A quality process can have a positive impact on services, cost, on-time delivery, development technology, quality people and quality of products (Zahran, 1998).

Getting requirements on story cards right continues to be a universal problem same as the requirements problems in the traditional methodology. Story cards errors can be costly in terms of low time, lost revenue, loss of reputation and even survival (Beecham, *et al.*, 2005). A critical aspect of the requirements process is the selection of the appropriate requirements set from the multitude of competing and conflicting expectations elicited from the various project stakeholders or from an onsite customer (Wieggers, 1997).

Looking at methods of CMM for process quality, measurement and improvement they tend to cover the area of requirements engineering poorly. It covers the area of requirements engineering inadequately. CMM does not cover how the quality of the requirements engineering process should be secured or what activities should be present for the requirements engineering process to achieve a certain maturity level. Some time it is really difficult to assess the maturity of a requirements

engineering process for a certain project, and it is difficult to know what is not addressed or what could be done to improve the process.

As agile software development methodology is the iterative software development methodology based on the story cards, for small to medium organisation and main objectives are lower cost, high productivity and customer. The CMM tends not to focus the software process on an organisation's business objectives in their software process improvement programme (Paulk, 1998). The main thing is that CMM and ISO 9000 do not say much about requirements engineering and subsequently little about how the quality of the requirements engineering process should be maintained and ensured (Gorschek and Tejle, 2002). Herbsleb and Goldenson (1996) reported the use of the CMM in several software organisations. The study consistently showed significant organisational performance improvements that were directly associated with process maturity. The study also mentioned that the CMM improvement path is not always smooth, the efforts generally took longer and cost more than expected. While story card is agile software development practice. Agile software development methodology is targeted to lower cost. Some of the KPAs have been found difficult to apply in small projects (Brodman and Johnson, 1997). This may be because CMM was originally structured for big enterprises (Lyard and Orci, 2000). CMM addresses practices such as document policies and procedure that large organisations need because of their size and management structure ((Brodman and Johnson, 1997).

Normally story cards for agile software development do not support the heavy documentation at all and people communicate verbally on an on-going basis. Unlike CMM, CMMI does not just focus on software process management; it also considers other departments such as marketing, finance and purchasing (Ahern, *et al.*, 2003). So it could be seen unnecessarily complex, when it is applied to agile software development practices like Extreme

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