Situational Requirement Method System: Knowledge Management in Business Support

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Abstract. Software developers have been successfully tailoring software development methods according the project situation and more so in small scale software development organizations. There is a need to propagate this knowledge to other developers who may be facing the same project situation so that they can benefit from other people experiences. In this paper, use of situational method engineering in requirement elicitation phase is explored. A new, user friendly and progressive web-based tool, Situational Requirement Method System (SRMS), for requirement elicitation phase is developed that can assist in creation, storage and extraction of methods related with this phase. These methods are categorized according to some criteria. This categorization also helps in searching a method which will be most appropriate in a given situation. This approach and tool can also be used for other software development activities.

Keywords: Knowledge Management, Situational Method Engineering, Requirement Elicitation, Method.

1 Introduction

The significance of knowledge management is immense in software development industry. Software industry is knowledge intensive and requires extensive management of this knowledge. Software systems are getting increasingly complicated today; the knowledge needed for the implementation is vast and unlikely to be held by any individual software developers. Knowledge management ensures that there is an effective sharing and exploitation of
accumulated, collective knowledge [3]. Every company in software development should set software process activities for the processes it adopts. According to each project and the needs of the company, they need different set of activities [20].

Method Engineering (ME) is a discipline to study engineering techniques for constructing, assessing, evaluating, managing methods and to study educational techniques for teaching and training method users [24]. Methods are normally general in nature and they cannot be used directly without adapting them according to the characteristics of the project. Because the engineering situation of each information system development (ISD) project is different, engineering methods need to be adapted, transformed or enhanced to satisfy the specific project situation [17]. In addition to the engineering method tailoring, necessary to fit the project situation, a customization of the engineering method for each engineer participating in the project is also required [17]. This is the concern of situational method engineering, where the term situational method is used to refer to a method tailored to the needs of a particular development setting.

Also, once a method is constructed according to the project situation and later applied successfully, it should be available for the future use in some repository so that others can learn from past experiences. It would be much easier if a tool can be used to store methods in the tool repository and later on methods can be searched from this repository. This tool must also provide the reuse of existing methods to create new methods.

In this paper, the use of situational method engineering in requirement elicitation phase is explored. A web–based tool is developed that can assist in creating methods related with this phase. Methods can be constructed from scratch, by extension or assembly and stored in a web–based tool. These methods are categorized according to criteria we have developed. This categorization also helps in searching a method which will be most appropriate in a given situation. This approach and tool can also be used for other software development activities.

This paper is organized as follows: In the next section, related work is described. In section 3 we have explained the use of situational method engineering in requirement elicitation phase and how the criteria are established. In section 4 Situational Requirement Method System (SRMS) tool is explained. SRMS tool comparison with existing tools is presented in section 5. Finally, the paper concludes in section 6.

2 Related Work

Rolland et al. [23] reported that process prescriptions should be selected according to the actual situation at hand. They experienced that a key discriminant factor in real processes is the product situation. This situation has