

# Knowledge Management in Agile Development

## Doctoral Proposal

Bahman Zamani

### Department of Computer Science and Software Engineering

Agile software development methodologies have been formally introduced in 2001, even though some of the ideas behind them (e.g., Iterative and Incremental Development) are not new and have roots back many years ago. The main cornerstones of agile methodologies are: give more value on teamwork, software, collaboration, and changeability than processes, documentation, contract, and plan, respectively. Among them, the most challenging one is to value software over documentation.

On the one hand, agile advocates rely on the tacit knowledge which is embodied in the team (developers' heads), rather than writing the knowledge down in documents. On the other hand, the detractors illuminate the benefits of documentation, e.g. sharing of knowledge, preventing knowledge loss, and easing maintenance. Dealing with documentation is knowledge-intensive work and it is wise to consider knowledge management as a broader area. By focusing on this flaw of agile methodologies, i.e. light documentation, and doing a literature survey we found that in fact a solution to this flaw could be made by relating knowledge management and agile methodologies.

In this research, we will address the issue of knowledge management in agile development, and will propose some improvements in agile methodologies to better manage the knowledge. We will try to answer the following research questions (RQ):

- ◇ RQ1: How do people do a project using agile methodologies and how do they manage the knowledge during the project?
- ◇ RQ2: How much effort and utility is included for managing a piece of knowledge, when doing a project in agile manner?
- ◇ RQ3: What is the impact of knowledge management on quality and productivity in agile processes?

To do this research, first we will define a conceptual prototype containing a generic agile process, a typical application, and some scenarios for walk-through. Second, we will perform the walk-throughs with the conceptual prototype to elicit potential improvements in knowledge management. Third, we will investigate selected potential improvements further, probably as enhancements to Eclipse, and then analyze the results to answer the research questions.