Chapter 6.7
Agile Practices in Project Management

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ABSTRACT

This chapter introduces agile project management as a way to improve the processes for software development in small organizations. The chapter contains a description of the main concepts and techniques used along with practical recommendations for their application in real situations. The chapter also analyzes the relationship between these practices and recognized process improvement models like the CMMI and the PMI PMBOK and presents case studies to illustrate implementation.

INTRODUCTION

Most of the reasons behind failure in software projects lie in the lack of sound project management practices. The results of many industry studies and surveys show that the absence of appropriate strategies for scope management, risk handling, or project planning are frequently found in challenged projects.[1] For that reason, process improvement (PI) initiatives start with the project management discipline. For example, the maturity level 2 of the Capability Maturity Model Integration (CMMI®[2]) model is focused on the development of basic project management capabilities (CMMI Product Team, 2006, p. 55). This means that although an organization should improve the project management and the engineering process, beginning with the first one may allow it to obtain better results.

Nevertheless, starting process improvement is an overwhelming endeavor no matter the size or nature of the organization. The improvement initiatives have to compete with "delivery projects" that always seem to be more important (or urgent) especially from the business user's point of view. The benefits of a PI initiative are usually difficult to perceive or measure in the short term. This causes the organization motivation to decline progressively and lead the initiative to failure. This situation is even worse for small or medium organizations where resource limitations are higher. Small and medium organizations must approach process improvement in a way that benefits are realized sooner.

Another aspect of PI projects that reinforces the situation previously described is that many times PI teams replace the absence of good practices with over-engineered processes where formalism and control exceed what is needed due the nature of the work on the project or organization. Managers, users, and practitioners start to perceive these new processes as obstacles and not as tools and refer to the new way of doing things as bureaucratic, rigid, or heavy-weight. Product quality may be improved (initially), but team productivity and motivation remain low which is going to impact product quality in the long run. Also, team focus deviates from reaching project objectives to blindly follow procedures. Small and medium organizations are also more affected by this situation since usually their environments (team size, product size, project duration, cost, etc.) are smaller, and over-engineered methods may have a greater impact on project delivery.

The application of agile practices for project management addresses these common problems and may allow an organization (especially small and medium ones) to manage effectively a process improvement initiative. The development of project management capabilities facilitates the establishment of the environment to control not only project delivery but also the improvement project itself. The agile approach (by definition lighter and goal-oriented) may reduce the effort (and cost) and contribute to realize benefits sooner, keeping high morale and motivation. Our intent is to describe briefly how agility is understood and applied within the project management context and how this may benefit a process improvement initiative.

There has been a lot of discussion between agile and traditional methods authors and supporters. We do not adhere to any of them, and our purpose is not to contribute to any side of that polemic. What we see is that the limits known as the usual home grounds for agile and traditional methods are blurring creating environments where no one of them is enough or complete. A mixed approach is needed to find the best solution. Also, as many other disciplines, agile project management (APM) may be enhanced by a proper use of tools. Choosing the right tool and deciding how to use it is not easy, so we created a special section to make some recommendations on that subject.

Agile Project Management

Origin of APM

APM has its roots in the agile methodologies for software development created specially during late 1990s and publicly formalized as a movement with the formation of the Agile Alliance and subsequent publication of the Agile Manifesto (see Figure 1. *Manifesto for Agile Software Development*) in 2001 (Beck et al., 2001). Every agile method adheres to the declaration of values and principles stated in the manifesto, but the approach to deliver the solution varies from one to another; however, since agile methodologies are designed to handle a product development project, project management practices are present in most cases. We took our main references from the work of Jim Highsmith who recently published a book on agile project management, the SCRUM method created by Ken Schwaber

Figure 1. Manifesto for Agile Software Development

Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it.

- Through this work we have come to value:
- Individuals and interactions over processes and tools
- Working software over comprehensive documentation Customer collaboration over contract negotiation Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.