Chapter 35
Wiki for Agility

Pankaj Kamthan
Concordia University, Canada

ABSTRACT

The movement towards agility is one of the most significant human-centered and socially oriented changes in industrial software engineering. In the practice of agile methodologies, there are different types of content (data, information, or knowledge) that are created, communicated, and consumed. It is imperative for an organization to manage such content, both during development and beyond deployment. This chapter proposes a conceptual model for understanding and exploring the use of Wiki as a vehicle for managing content in agile software development. In doing so, the parity between agile software development and Wiki is shown, human and social aspects of each are emphasized, the Social Web-Context of Wiki is demonstrated, illustrative examples are given, and the implications of committing to a Wiki are considered.

INTRODUCTION

For the past half century, software has played an integral role in the advancement of many sectors of society. The increasing significance of and dependence on software of the society underscores its development and evolution. There are multiple viewpoints of a software system, one of which is engineering. The discipline of *software engineering* advocates a systematic and disciplined approach towards the development and evolution of software systems.

In the past decade, there have been a number of significant changes in industrial software engineering, including the movement towards agility. The agile methodologies are part of a shift from predictive to adaptive approach towards software development (Highsmith, 2009). It has been shown in a number of studies that agile methodologies are being increasingly deployed in many organizations of different sizes, for a variety of application domains, for software projects with teams that are geographically-collocated or, more recently, geographically-dispersed (Smite, Moe, & Ågerfalk, 2010; Brown, 2012).

The ability to manage content has been considered important for an organization (Schneider, 2009), and doing so can be a critical difference between success and failure of a software project (Perkins, 2006). It is also known that a number of human and social factors need to be considered in managing

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content effectively (Thomas, Kellogg, & Erickson, 2001). The emphasis on the people involved in software development is among the hallmarks of agility. It is therefore crucial to understand and explore means that can effectively accommodate the human and social dimensions of managing content in agile software development.

In the past decade, one technological means, namely that of the *Social Web* (O'Reilly, 2005), has gained acceptance and prominence. There are a number of noteworthy applications within the Social Web environment, including *Wiki* (Leuf & Cunningham, 2001). The purpose of this chapter is to understand and explore the use of Wiki for managing the content that is created, communicated, and consumed in agile software development, from the perspectives of human-centered and socially-oriented software engineering, as well as that of the Social Web.

The rest of the chapter is organized as follows. First, background and previous work relating agile methodologies, content management, and Wiki is considered. This is followed by introduction of a conceptual model for integrating Wiki in agile software development for the purpose of managing content systematically, discussion of salient aspects of the conceptual model, and presentation of representative examples illustrating the conceptual model. Next, directions for future research are highlighted. Finally, concluding remarks are given.

BACKGROUND

This section provides relevant background on agile software development and Wiki, and discusses previous work relating agile software development, content management, and Wiki.

Understanding Agility

The origins of the basic ideas behind agility date back to the 1950s (Larman & Basili, 2003), although they resurfaced and became prominent only after large-scale commoditization of software. In the 1990s, a number of limitations of rigidity in approaches for the development of certain types of software systems were realized. The drive to cope with these limitations led to the inception of agility in industrial software development.

The *Agile Manifesto* characterizes the term "agile" and provides a vision for agile software development. It is motivated by the need for organizations to adequately respond to variability in the market, and to improve the relationship between technical and non-technical stakeholders, thereby reducing risk and increasing the likelihood of success of software projects.

For the sake of this chapter, an *agile methodology* is a software development methodology based on the Agile Manifesto. The other terms can be derived similarly. An agile methodology is usually equipped with a process that outlines how the development of software should proceed over time.

Characteristics of an Agile Methodology

There are a number of discernible human-centered and socially-oriented characteristics of an agile methodology, including the following: