Chapter 28

An Analysis of the Agile Theory and Methods in the Light of the Principles of the Value Co-Creation

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ABSTRACT

The traditional methods for managing projects, i.e., the methods based on the Waterfall model, consider a project as successful if the initial commitments are respected at the end of the project. This means that the value provided to the stakeholders is evaluated according to the fulfilment of a contract originally signed. In this chapter, the author discusses the notion of value and value co-creation in the scope of the project management with a focus on the computing industry. Indeed, a promising theory for managing software implementation projects, called the Agile theory, seems to comply with some principles of the value co-creation. The Agile theory is first compared to the traditional project management frameworks and, then, to the principles of the value co-creation. Lastly, a review of the most used agile methods is proposed. This helps the reader to choose an agile method which is the most compliant with the value co-creation principles.

INTRODUCTION

The last Chaos Report published by The Standish Group (2015) reported that only 29% of the analysed software implementation projects can be considered as a success. Indeed, only this proportion of the projects meets the objectives, the budget and the timing initially set in the contract. Nevertheless, the most important issue is not addressed in that report: Which are the projects *which really provide value* to their stakeholders and users? Or, in other words, can we assert that the value extracted from the use of a new software release is intimately related to the strict respect of the initial commitments (i.e., the functional scope and the non-functional characteristics, the budget and the deadlines), which are agreed at the early beginning of the project?

In the scope of this transdisciplinary book, this chapter challenges the characteristics of the traditional practices for managing projects. More precisely, this chapter deals with the notion of value and of value co-creation in the scope of project management in the software engineering industry. Indeed, the traditional frameworks for managing projects are being deeply challenged in the literature, and especially in the software industry by, e.g., Koskela and Howell (2002) and Fernandez and Fernandez (2008/2009). Several firms would like to change their usual project management structure and principles. Indeed, the satisfaction of the customers and users is rarely very high (The Standish Group, 2015). Until the end of the nineties, most of the companies used traditional approaches to manage the software implementation –by *traditional approaches*, the author means the project management methods based on the Waterfall model, which recommend to establish a contract at the beginning of the project in order to fix the terms, including the scope, the budget and the timing. This contract is then used at the end of the project in order to assess if the project is a success or not.

There is another type of methods which has become very popular since the last decade. They have been grouped under the name *Agile theory* in 2001 (Beck, et al., 2001). Actually, the Agile theory is first met in the software industry as a reaction to traditional approaches for implementing and delivering software (Larman & Basili, 2003). The basic idea behind this recent theory is to propose "better ways of developing software by doing it and helping others do it" (Beck, et al., 2001). One of its twelve principles is "to satisfy the customer through early and continuous delivery of *valuable software* [emphasis added]" (Beck, et al., 2001). A legitimate question comes immediately to mind: is the notion of *valuable software* similar to the notion of *value* or *value-in-use* such as understood in the service science? This chapter attempts to answer to this question.

The chapter structure is as follows. First, some relevant elements of the traditional project management frameworks are introduced. Then, the Agile theory is explained and compared to the traditional approaches. Based on that, the next section is a discussion of the Agile theory compared to the value co-creation principles. Lastly, the main existing agile methods are examined in the light of the value co-creation principles. A conclusion ends this chapter.

BACKGROUND

The Fundamental Structure of Traditional Project Management Methods, and Its Consequences

Basically, traditional methods for managing projects, for which the expected output could be a software release, are structured as a sequence of core activities. The most known meta-model is the *Waterfall* (Royce, 1987). Its structure, which is clearly sequential, is composed of the following steps –note that, when following a Waterfall-based method, an implementation team should move to a next step only when the preceding one is considered as complete.

1. **Requirement Engineering:** The objective is to gather all the needs of the stakeholders as well as the constraints that may impact the project.
2. **Analysis:** This step covers the modelling of the system-to-be. It aims at describing all its future functionalities, the rules that it will respect and the quality criteria that it has to respect.

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