



Chapter XI

Agile and Defined Project Development

In this chapter, the ADPD methodology will be presented and discussed. The name and the consequent acronym are due to the fact that I would like to create a methodology that is agile and, therefore, compliant to the Agile Manifesto, but that at the same time can be widely accepted and then also deployed in organizations that are not inclined to accept Agile development. The ADPD's main aim is to eliminate the criticisms that often bound Agile methodologies with hacking or unstructured development. To obtain such results, the methodology must be compliant at least with the Software Capability Maturity Model, commonly known as CMM-SW (Paulk, 1993, 1993a) Level 3: the defined level. It also explains the second term of the acronym. Third and fourth terms are quite obvious and do not necessitate any further investigation.

The compliance with CMM-SW Level 3 allows me to successfully apply this methodology in an environment where a standardization in terms of software or product quality is a must, since the Defined Level of CMM-SW allows you to match the requirements of most of the companies that usually do not agree with Agile methodologies and management.

These are the main reasons for which I started to define a new methodology, mainly based on the concept of the first Agile methodology I have applied in real projects; that is, XP (Beck, 1999, 2000).

I have inserted in ADPD all the positive aspects and techniques that are part of XP and that I was able to apply successfully in daily project management. I modified all the improvable aspects, inserting some new hints to the project manager and guaranteeing at least the compliance with CMM-SW Level 3.

ADPD Life Cycle

The successful application of a methodology is mainly due to the comprehension of its life cycle and of the advantages and dues that the methodology offers or compels you to deal with.

ADPD has been created with a main target in mind: reduce the costs of maintenance. In a past publication by the same editor, I have evidenced how Agile methodology and, particularly, XP application can bring constant maintenance costs (Fioravanti, 2003) during the project life time, and I have tried to transfer this aspect to ADPD in order to limit one of the major drawbacks of classical methodologies that consists in the fact that the maintenance costs are not constant during the project life cycle. This is due to the organization of the life cycle in large monolithic blocks, where, if an error occurs at some point, it compels you to re-discuss a large part of the work already done.

We can evidence this fact considering different life cycles, such as the monolithic waterfall life cycle and the iterative spiral life cycle, compared to agile (with particular reference to ADPD). The steps that are present in each life cycle can be considered the same or at least very similar. What really differs is the instant of application of each step and the consequent organization of these steps. For each methodology, it is supposed to have the following steps: analysis, design, develop, test, and release/deploy.

The waterfall life cycle has these phases organized in a sequence: one after the other without any feedback but only with an interaction between the adjacent phases. An error in a phase compels you to review between 25% and 50% of the work already done in that phase and at least 25% of the work performed in the previous phases. For example, if you discover that you have a design error, you are compelled to review the global design of the system, reworking it in part, and you have to verify if the analysis performed before is compliant with the new reworked design, since a design flaw often impacts the requirement satisfaction. This fact suggests that for the waterfall life cycle, it is true that the impact of errors on maintenance time, in terms of effort to be spent,

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