Chapter III

Practical Experience in Customization for a Software Development Process for Small Companies Based on RUP Process and MSF

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ABSTRACT

The quality in software projects is related the deliveries that are adjusted to the use, and that they take care of to the objectives. In this way, Brazilian organizations of software development, especially the small and medium ones, need to demonstrate to future customers whom an initial understand of the business problem has enough. This chapter has as objective to demonstrate methodology, strategy, main phases and procedures adopted beyond the gotten ones of a small organization of development of software in the implantation of a Customized Software Engineering Process and of a Tool of Support to the Process in the period of 2004 to 2006 on the basis of rational unified process (RUP) and in the Microsoft solutions framework (MSF).
Practical Experience in Customization for a Software Development Process for Small Companies

INTRODUCTION

Most Brazilian software development companies focus on the customer’s needs, thus creating cells dedicated to these customers both for products that have been built or that are being built. Furthermore, they normally lack the financial resources necessary for investments in specialized technologies and professionals, leading them to use processes that do not adhere to the market’s best practices, such as object-oriented technology and standard development methods and procedures, for example, rational unified process (RUP), unified modeling language (UML), Microsoft solutions framework (MSF), quality models proposed by the Software Engineering Institute/Capability Maturity Model Integration (SEI/CMMI), and the International Standardization Organization/Standard CMMI Appraisal Method for Process Improvement (ISO/SPICE). This chapter describes the general concepts of the low and high complexity software development processes and models, the steps that a small Brazilian software development company followed to achieve maturity, parting from a research and development initiative in the aforementioned processes, and finally creating and instituting the customized software engineering process (CSEP) and the process supporting tool (PST). An economic/financial overview of the Brazilian market for software development is also presented, besides historical data concerning the projects before and after the implementation of the processes and tool, as well as the success obtained, and lastly the emerging trends in Brazil’s software development market.

BACKGROUND

One of the factors that determine the competitiveness of the companies is the definition of the target market. Customer companies of different sizes, who need software based products or systems, expect to receive quality solutions that meet the defined requirements. Besides the agile models, the proposals made by Rational, such as the RUP, and Microsoft’s MSF will be described, which although similar, clearly display differences regarding complexity and level of depth in relation to specific subjects, thus justifying the combination of both processes.

In the following sections, the authors cover the processes and methods that stand out in the Brazilian market and that would support software development companies individually, capable of making them competitive. In the subsection 1.2.4, a better detailed vision about the flexibility and its level of customization will be presented. This approach shows the project staff how complex or simple the process can be for each project according tailoring activities. In this way, the project portfolio can cover projects with any level of complexity.

Rational Unified Process

The rational unified process is a software engineering process aimed at establishing tasks and responsibilities within a software development organization in a disciplined manner. Its objective is to ensure the production of high quality software that satisfies the needs of its stakeholders within predictable deadlines and costs. The RUP uses some of the best current practices in software development, aimed at providing service to a large number of projects and organizations. Although the RUP is widely customizable, it is considered to be a complex and heavy process, especially applicable in large development teams and large software projects. According to the RUP, it has two dimensions, as shown in Figure 1 (Kruchten, 2003):

The horizontal axis represents the time and shows the life cycle aspects of the process during its development. This axis represents the dynamic aspect of the process when it is approved and is expressed in terms of phases, interactions, and macros.
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