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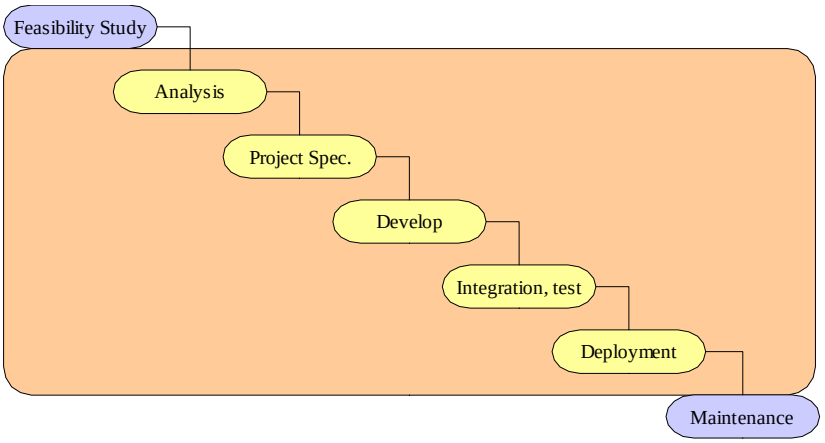
## Chapter VIII

# Classical Methodologies, Techniques, and Tools for Project Management

In order to better understand Agile methodologies, it is necessary to have a clear background of what software engineering has suggested in the past regarding the methodologies for approaching software development and software management (Agresti, 1986; Buxton, 1976; Ghezzi, 1990; Naur, 1969). For these reasons, in this chapter, the so-called classical methodologies for project management are considered and commented on, together with the techniques, meta-models such as the spiral life cycle, and tools such as risk management and assessment. It is important to know the background of software engineering in order to understand if Agile methodologies will fit your needs.

In this chapter, the waterfall life cycle and a couple of evolutionary life cycles (Gilb, 1988), such as prototyping and spiral life cycles (Boehm, 1988), will be analyzed.

*Figure 1. Waterfall life cycle with central phases more related to development evidenced*




## Waterfall Life Cycle

The waterfall life cycle is perhaps the first and most well-known life cycle for software development. The waterfall model divides the project development into consequent phases that have to be executed one after the other.

This model assumes that the process of software development can be divided in five phases to which two other phases (one before and one after) can be added to complete the cycle. The life cycle is summarized in Figure 1.

The central phases generally are considered the real phases of the product development and, therefore, have been evidenced, while the first and last phases can be considered respectively as necessary phases before the real starting of the project (feasibility study) and a consequence of the project development (maintenance). In the following, all these phases will be detailed more in order to give a clearer picture. All the phases are not really separated, but each phase is partially superimposed to the following apart from the feasibility study and the maintenance. This allows a partial feedback among phases, as shown in Figure 2.

## Feasibility Study

The feasibility study can be defined as the make or buy phase, since it is now that the company decides if a new project has to be realized, one or more