

Software Project Management

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Abstract

With the steadily evolving of software engineering from its funding days in the 1940s until today in the 2010s, software project management (SPM) is used more and more widely in IT field to bring about the successful completion of specific software project goals and objectives. In this article, by the introduction of software project management elements and principles, elaborating the importance of software project management in the process of software development.

Keywords: software, software engineering, software project management, process, importance

1 Introduction

1.1 Software Process

In software engineering, a software process is a splitting of software development work into distinct phases containing activities with the intent of better planning and management. Common methodologies include waterfall, prototyping, iterative and incremental development, spiral development, rapid application development, extreme programming and various types of agile methodology, as shown in Figure 1.

1.2 Software Project Management

Software Project Management is the art and science of planning and leading software projects. It is a sub-discipline of project management in which software projects are planned, monitored and controlled.

- The purpose of project planning is to identify the scope of the project, estimate the work involved, and create a project schedule. Project planning begins with requirements that define the software to be developed. The project plan is then developed to describe the tasks that will lead to completion.
- The purpose of project monitoring and control is to keep the team and management up to date on the project's progress. If the project deviates from the plan, then the project manager can take action to correct the problem.
- Project monitoring and control involves status meetings to gather status from the team. When changes need to be made, change control is used to keep the products up to date.

2 History of Software Project Management

2.1 The Software Crisis

Software engineering was spurred by the so-called software crisis of the 1960s and 1970s, which identified many of the problems of software development. Many software projects ran over budget and schedule.

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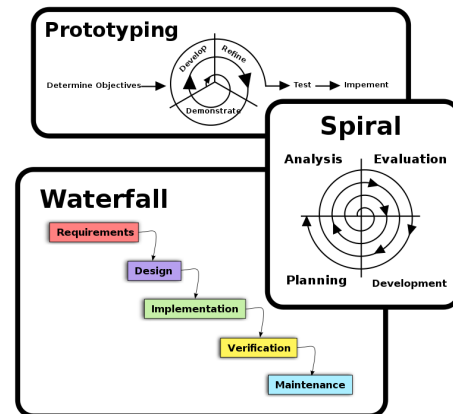


Figure 1: Waterfall model, prototyping, and spiral development.

Some projects caused property damage. A few projects causes loss of life. The software crisis was originally defined in terms of productivity, but evolved to emphasize quality. The software crisis has been slowly fizzing out, because it is unrealistic to remain in crisis mode for more than 20 years.

2.2 The Origins

Software project management (SPM) was proposed in 1970s. DOD (Department of Defense) of USA have been a research to find the reasons of software failure. The result showed that a big part of failure projects was due to the poor management rather than technology problems. Some problems leading to software failure include the lack of planning, poor management, time-management, unclear goals, lack of testing. To avoid this problems and develop high-quality software, a careful software project management is essential.

3 Software project management activities

The activities covered by software project management including 11 parts:

- Planning
- The feasibility study
- Project execution
- Requirements analysis
- Architecture design
- Detailed design
- Code and test
- Integration
- Qualification testing
- Installation
- Acceptance support

4 Overview

Software project management (SPM) is a sub-discipline of project management in which software projects are planned, monitored and controlled.

5 Conclusion

Software project management is a necessary tool to develop a successful software. Good project management cannot guarantee success, but poor management on significant projects always leads to failure.

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