

Unit I

Introduction

Why Have Project Phases and Management Reviews?

- ▶ A project should successfully pass through each of the project phases in order to continue on to the next
- ▶ Management reviews (also called phase exits or kill points) should occur after each phase to evaluate the project's progress, likely success, and continued compatibility with organizational goals

Distinguishing Project Life Cycles and Product Life Cycles

- ▶ The project life cycle applies to all projects, regardless of the products being produced
- ▶ Product life cycle models vary considerably based on the nature of the product
- ▶ Most large IT products are developed as a series of projects
- ▶ Project management is done in all of the product life cycle phases

Capability Maturity Model

- ▶ The CMM is a process model based on software best-practices effective in large-scale, multi-person projects.

The CMM has been used to assess the maturity levels of organization areas as diverse as software engineering, system engineering, project management, risk management, system acquisition, information technology (IT) or personnel management, against a scale of five key processes, namely:

Initial,
Repeatable,
Defined,
Managed and
Optimized.

Level 1 - Initial

- ▶ At maturity level 1, processes are usually ad hoc, and the organization usually does not provide a stable environment. Success in these organizations depends on the competence and heroics of the people in the organization, and not on the use of proven processes

Level 2 - Repeatable

- ▶ At maturity level 2, software development successes are repeatable. The processes may not repeat for all the projects in the organization. The organization may use some basic project management to track cost and schedule.

Level 3 - Defined

- ▶ The organization's set of standard processes, which are the basis for level 3, are established and improved over time. These standard processes are used to establish consistency across the organization. Projects establish their defined processes by applying the organization's set of standard processes, tailored, if necessary, within similarly standardized guidelines.

Level 4 - Quantitatively Managed

- ▶ Using precise measurements, management can effectively control the software development effort. In particular, management can identify ways to adjust and adapt the process to particular projects without measurable losses of quality or deviations from specifications

Level 5 - Optimizing

- ▶ Maturity level 5 focuses on continually improving process performance through both incremental and innovative technological improvements. Quantitative process-improvement objectives for the organization are established, continually revised to reflect changing business objectives, and used as criteria in managing process improvement.

International Organization for Standardization(ISO)

12 Engineering Activities

- Systems requirement analysis
- System architectural design
- Software requirement analysis
- Software architectural design
- Software detailed design
- Software coding and testing
- Software Integration
- Software qualification testing
- System integration
- System qualification testing
- Software installation
- Software acceptance test