

3.2 Software Project Planning Process

3.2.1 Purpose

The purpose of Software Project Planning is to establish reasonable plans for performing the software engineering and for managing the software project.

Software Project Planning involves developing estimates for the work to be performed, establishing the necessary commitments, and defining the plan to perform the work.

The software planning begins with a statement of the work to be performed and other constraints and goals that define and bound the software project (those established by the practices of the Software Project Planning key process area). The software planning process includes steps to estimate the size of the software work products and the resources needed, produce a schedule, identify and assess software risks, and negotiate commitments. Iterating through these steps may be necessary to establish the plan for the software project (i.e., the software development plan).

This plan provides the basis for performing and managing the software project's activities and addresses the commitments to the software project's customer according to the resources, constraints, and capabilities of the software project.

3.2.2 Goals

The following goals are achieved by the Software Project Planning Process:

1. Software estimates are documented for use in planning and tracking the software project.
2. Software project activities and commitments are planned and documented.
3. Affected groups and individuals agree to their commitments related to the software project.

3.2.3 Roles

The following roles are involved in the executing the Software Project Planning Process:

CM (Configuration Management)
Customer
Project Software Manager
Senior Management
Software Engineering Group
SQA (Software Quality Assurance)

The following roles are involved in maintaining, evolving, and verifying adherence to the Software Project Planning Process:

Change Control Board: [SEPG]
Process Steward: [SEPG]
Process User: [Requirements Analyst]
SQA: [SQA group or equivalent]

3.2.4 Entry Criteria

The following criteria must be met prior to initiating the Software Project Planning Process:

1. The Project Number has been assigned; AND
2. A Software Project Manager has been assigned.

3.2.5 Process Steps

The following steps constitute the Software Project Planning Process:

1. Participate on the project proposal team.
2. Initiate software project planning in the early stages of, and in parallel with, the overall project planning.
3. Participate with other affected groups in the overall project planning throughout the project's life.
4. Review software project commitments made to individuals and groups external to the organization with senior management.
5. Identify or define a software life cycle with predefined states of manageable size.
6. Develop the project's software development plan.
7. Document the plan for the software project.
8. Identify software work products that are needed to establish and maintain control of the software project.
9. Derive estimates for the size of the software work products, or changes to the size of the software work products.
10. Derive estimates for the software project's effort and costs.
11. Derive estimates for the project's critical computer resources.
12. Derive the project's software schedule.
13. Identify, assess, and document the software risks associated with the cost, resource, schedule, and technical aspects of the project.
14. Prepare plans for the project's software engineering facilities and support tools.
15. Record software planning data.

3.2.6 Exit Criteria

The following exit criteria must be met to terminating the Software Project Planning Process:

1. The Project Number has been closed out.

3.2.7 Procedure Process Support Elements

Although there are no required documented procedures for the Software Project Planning Process, the following process activities are typically performed according to a documented procedure.

1. External Commitment Review Procedure (3.3.1.1);
2. Project Plan Development Procedure (3.3.1.2);
3. Work Product Size Estimation Procedure (3.3.1.3);
4. Effort Estimation Procedure (3.3.1.4);
5. Cost Estimation Procedure (3.3.1.5);
6. Critical Computer Resource Estimation Procedure (3.3.1.6);
7. Schedule Development Procedure (3.3.1.7).

3.2.8 Template and Form Process Support Elements

The following templates and forms must be used as the basis for the Software Project Planning Process

deliverables:

1. Statement of Work Template (3.3.2.1);
2. Software Project Plan Template (3.3.2.2);
3. WBS Template (3.3.2.3);
4. Work Product Size Estimation Form (3.3.2.4);
5. Effort Estimation Form (3.3.2.5);
6. Cost Estimation Form (3.3.2.6);
7. Critical Computer Resource Estimation Form (3.3.2.7);
8. Schedule Estimation Form (3.3.2.8);
9. Project Commitment Form (3.3.2.9).

3.2.9 Training Process Support Elements

The following training classes and reference materials are available to enhance the ability to perform the Software Project Planning Process:

1. TeraQuest Software Project Planning and Tracking Seminar (3.3.3.1);
2. TeraQuest Delphi Estimation Techniques Workshop (3.3.3.2);
3. TeraQuest Software Risk Management Seminar (3.3.3.3).

3.2.10 Tool Process Support Elements

The following tools have been sanctioned for use in producing the Software Project Planning Process deliverables:

1. SLIM – QSM (3.3.4.1);
2. COCOMO (3.3.4.2);
3. Microsoft Project (3.3.4.3);
4. Project Workbench (3.3.4.4);
5. Artemis (3.3.4.5);
6. @ Risk (3.3.4.6).

3.2.11 Measure Process Support Elements

The following product, development process, and Software Project Planning Process measures are captured and analyzed:

Product Measures:

1. Committed Product Size Measure (3.3.5.1);
2. Committed Product Computer Resource Measure (3.3.5.2).

Project Development Process Measures:

3. Committed Project Effort Measure (3.3.5.3);
4. Committed Project Cost Measure (3.3.5.4);
5. Committed Project Schedule Measure (3.3.5.5);

Software Project Planning Process Measures:

6. Committed & Forecasted & Realized Software Project Planning Effort Measure (3.3.5.6);
7. Committed & Forecasted & Realized Software Project Planning Schedule Measure (3.3.5.6).

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3.2.12 Job Aid Process Support Elements

The following job aids can be used by the experience Software Project Planning practitioner and as verification tools by SQA:

1. External Commitment Review Procedure Checklist (3.3.6.1);
2. Project Plan Development Procedure Checklist (3.3.6.2);
3. Work Product Size Estimation Procedure Checklist (3.3.6.3);
4. Effort Estimation Procedure Checklist (3.3.6.4);
5. Cost Estimation Procedure Checklist (3.3.6.5);
6. Critical Computer Resource Estimation Procedure Checklist (3.3.6.6);
7. Schedule Development Procedure Checklist (3.3.6.7).

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