

**Project Management Planning – Checklist, Template, Guidelines**  
**Prepared by Sid Snook, June 19, 2003**

**Technical Content Recommendations**

(The content recommendations herein are based on the references provided and 35+ years of experience developing computer systems.)

**Purpose & Scope.**

This checklist is a recommended guideline for the content of project management planning (PMP) documentation. A PMP is applicable to any and all phases of a system / product life cycle. The PMP may be applied to any type of computer system, software application development, or computer related project, regardless of the scope, size, complexity, or criticality. The PMP is applicable to all forms of computer system product delivery media, including client/server, web-based, firmware, embedded systems code, programmable logic arrays, and software-in-silicon.

**References:**

1. IEEE Std 1058-1998, *IEEE Standard for Software Project Management Plans*
2. IEEE Std 1490-1998, *IEEE Guide – Adoption of PMI Standard – A Guide to the Project Management Body of Knowledge*
3. *Radical Project Management*, Rob Thomsett, Yourdon Press, Copyright 2002 (See included summary of “eXtreme Project Management Rules.”)

**Planning Philosophy:**

1. Military Axiom - No plan, however good, survives the departure point into battle.
2. To fail to plan is to plan to fail.

**PMP Pre-Requisites.**

The project should be approved by the cognizant or responsible manager and should have an assigned project manager or leader. It is considered critical...and absolutely essential...to have a single point of project leadership who has sufficient authority and freedom of action to carry out (and is responsible for) any and all project decisions.

All scope, requirements identification, market analysis, planning, prototyping activities and results should be documented prior to project requirements or configuration management being baselined. (See also *Concept of Operations Template* on <http://www.StickyMinds.com>)

One or more of the following or other equivalent documentation should be available to provide the justification for initiating a project:

1. Minutes from customer, user, senior management, or sponsor project initiation meeting(s)
2. A request for proposal (RPF)
3. Written direction: email, letter, or a memorandum from a customer, user, sponsor, senior management, senior corporate staff
4. Statement of Work
5. Verbal direction (it is recommended to document...“for the record”...any verbal project direction)

**Experience Note - Project Leadership.** The **single most important success element** for a project is to have an assigned project leader who has the commensurate talent, experience, and authority to execute all assigned responsibilities. This project leader should be the single point of authority for all project decisions as well as the main advocate and “champion” of the project. This is a somewhat intangible role but in my experience, it is absolutely essential. I emphasize leader as opposed to manager. A leader can delegate management tasks, responsibilities and, authority...but not leadership!

Closely associated with the project leader and equally...if not more important... is the **project sponsor**. “Our research and experience has shown that the effectiveness of the project sponsor role is the single best predictor of project success or failure.”(3.) “Your sponsor is your most important stakeholder”(3.)

**Experience Note - Project Communication.** The **second most important success element** for a project is adequate, timely, appropriate, clear, and concise communication between all project “stakeholders” (e.g., sponsors, project manager, senior management/CEO, developers, testers, admin staff, senior management.). “There are at least 10 stakeholders on every project you do. If you can’t find 10, keep looking. They’re out there somewhere.”(3.) “You cannot not communicate.”(3.)

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**“eXtreme Project Management Rules” (3.; Abridged):**

- Rule 1 - “People, not resources or users, work on projects.”
- Rule 2 - “Never confuse the map with the journey.”
- Rule 4 - “Managing projects is the management of creativity.”
- Rule 6 - “What happens after a project is over is as important as during it.”
- Rule 7 - “No sponsor, no start.”
- Rule 8 - “A plan created by one person is another person’s nightmare.”
- Rule 9 - “There is no such thing as a small project.”
- Rule 11 - “Most projects that fail, failed before they started.”
- Rule 14 - “The best time to negotiate project success is before the project starts.”
- Rule 15 - “You cannot not communicate.”
- Rule 18 - “If you haven’t defined quality, you can’t measure it.”
- Rule 19 - “When planning a project, it pays to be paranoid.”
- Rule 21 - “If you can’t trust your team get one you can.”
- Rule 22 - “Most estimation errors occur before you estimate.”
- Rule 24 - “Never confuse tracking projects with tracking people.”
- Rule 25 - “The fact that a task is finished does not mean that it is right.”
- Rule 26 - “If your project has not changed, be afraid, very afraid.”
- Rule 30 - “Remember, great project managers ask for help and ask for it as soon as possible.”
- Rule 31 - “Your sponsor is your most important stakeholder.”
- Rule 32 - “Your stakeholders are your best friends or your worst enemies...you decide.”

**Project Management Plan Content Summary.**

The recommended basic components described in this section should be included unless there is sufficient and acceptable justification for any of them in whole or in part to be not applicable. These basic components may have different names, groupings, or sequences in different projects and it may be necessary to determine if there is an equivalent or suitable substitute. Additional information may be added as deemed necessary.

Title Page

Table of Contents

List of Illustrations

Introduction

Project Organization

Managerial Process

Technical Process

Work Packages, Schedule, and Budget

**Project Management Plan Document Detailed Contents**

(For those items in the summary above that are not self-explanatory, the following detailed information is provided.)

**Title Page.**

1. On the title page of a user document include at least the following information:
  - a. Document name
  - b. Configuration Management identification number (The identification of the document should be consistent with the configuration management system of the issuing organization. See also *Configuration Management Guidelines Template* on <http://www.StickyMinds.com>)
  - c. Document version and date
  - d. Applicable project, system, or software application name
  - e. Issuing organization
  - f. Author’s name
2. The design and arrangement of these items on the title page are at the discretion of the organization preparing the document.

**Project Management Planning – Checklist, Template, Guidelines**  
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**Introduction.**

This section provides an overview/summary of the project and the product(s), a list of project deliverables, the plan for development and evolution of the plan, reference materials, and definitions and acronyms used within the plan.

**Purpose of this Document.**

**Project Overview.** This section provides a concise summary of the product to be delivered, major work activities, major work products, major milestones, required resources, and master schedule and budget.

1. Purpose, scope and objectives
2. Business/operational process model and associated data model (consult with user[s] and/or sponsor).

Relationship of this project to other projects, as appropriate.

**Project Deliverables List.** This section lists all of the items to be delivered to the customer, the delivery dates, delivery locations, and quantities required to satisfy the terms of the project agreement.

**Evolution of the Plan.** This section specifies the plans for producing both scheduled and unscheduled updates to the plan.

1. Methods of disseminating the updates shall be specified.

This subsection shall also specify the mechanisms used to place the initial version of the plan under change control and to control subsequent changes.

**Reference Materials.** This section provides a complete list of all documents and other sources of information referenced.

1. Each document should be identified by title, CM#, report number, date, author, and publishing organization.
2. Other sources of information, such as electronic files, shall be identified in an unambiguous manner using identifiers such as date and version number.

Any deviations from referenced standards or policies shall be identified and justifications shall be provided.

**Definitions and Acronyms.** This section defines, or provides references to the definition of all terms and acronyms required to properly interpret the plan.

**Project Organization.**

This section specifies the business/operational process model for the project, describe the project organizational structure, identify organizational boundaries and interfaces, and define individual responsibilities for the various project elements.

**Project Process Model.** This section defines the relationships among major project functions and activities by specifying the timing of major milestones, baselines, reviews, work products, project deliverables, and signoffs that span the project.

1. The process model may be described using a combination of graphical and textual notations.
2. The process model should include:
  - a. project initiation
  - b. roles and responsibilities
  - c. project termination activities.
3. Address the members and responsibilities of a project team including (but not limited to) the following functional areas:
  - a. Business/operational/user sponsorship;
  - b. Requirements engineering;
  - c. Software engineering;
  - d. Test engineering;
  - e. Configuration management;
  - f. Quality Assurance & Control;
  - g. Production/Operational planning;
  - h. Implementation;
  - i. and, User support.

**Project Management Planning – Checklist, Template, Guidelines**  
**Prepared by Sid Snook, June 19, 2003**

**Project Process Model.** (continued)

**Organization Structure/Chart.** This section describes the internal management structure of the project. Graphical devices such as hierarchical organization charts or matrix diagrams may be used to depict the lines of authority, responsibility, and communication within the project.

**Organizational Boundaries and Interfaces.**

1. This section describes the administrative and managerial boundaries between the project and each of the following entities:
  - a. external interfaces,
  - b. internal interfaces,
  - c. the parent organization,
  - d. the customer organization,
  - e. subcontracted organizations,
  - f. or any other organizational entities that interact with the project.
2. In addition, the administrative and managerial interfaces of the project support functions, shall be specified, such as:
  - a. Configuration management,
  - b. quality assurance/control,
  - c. sales/marketing,
  - d. customer support

**Project Responsibilities.** This section identifies and states the nature of each major project function and activity, and identifies the individuals who are responsible for those functions and activities. A matrix of functions and activities versus responsible individuals may be used to depict project responsibilities.

**Managerial Process**

This section specifies management objectives and priorities; project assumptions, dependencies, and constraints; risk management techniques; monitoring and controlling mechanisms to be used; and the staffing plan.

**Management Objectives and Priorities.** This section describes the philosophy, goals, and priorities for management activities during the project.

1. Topics to be specified may include, but are not limited to:
  - a. the frequency and mechanisms of reporting to be used;
  - b. the relative priorities among requirements, schedule, and budget for this project;
  - c. risk management procedures to be followed;
  - d. configuration management procedures to be followed;
  - e. quality assurance / quality control procedures to be followed,
  - f. and, a statement of intent to acquire, modify, or use existing software.

**Assumptions, Dependencies, and Constraints.** This section states the assumptions on which the project is based, the external events the project is dependent upon, and the constraints under which the project is to be conducted.

**Project Cost Management.** Cost estimates versus budget, expenditures, work accomplished (e.g., “earned-value”) and controlling mechanisms.

**Project Management Planning – Checklist, Template, Guidelines**  
**Prepared by Sid Snook, June 19, 2003**

**Managerial Process (continued)**

**Risk Management.** This section identifies and assesses the risk factors associated with the **project processes and completion** as well as the **product processes, implementation, operation, and testing**. It should also prescribe mechanisms for tracking the various risk factors and implementing contingency plans. An attempt should be made to initially provide some risk-reduction, mitigation, or alternatives. Risks should be monitored and re-evaluated on a periodic basis throughout the entire project.

1. **Project risk factors that should be considered include but are not limited to:** project completion, contractual, size and complexity of the project, personnel acquisition and retention, achieving customer acceptance of the product; political, regulatory, financial, contractual, 3<sup>rd</sup> party interaction/sub-contractor, schedule, time to market, requirements “creep”, user turnover/training, catastrophic event (e.g., fire, hurricane), dependencies on other projects.
2. **Product risk factors that should be considered include but are not limited to:** user perception/impact/visibility, internal architecture compatibility with existing systems, development tools, prior defect history / bug lists, complexity, size, frequency of use, exception/error handling, system constraints (input, outputs, computational, and file systems), errors versus resulting operational failures (\$ impact), availability of technology, architecture, obsolescence by virtue of new emerging technology
3. Assign priorities to each risk.
4. Include identification, description, assessment, management, impacts, and mitigation or contingency planning.
5. As applicable, the following should be considered:
  - a. Impact of success or failure of system implementation;
  - b. Are risks identified relevant, plausible, and intelligently communicated;
  - c. Risks versus benefits of the proposed changes or new system;
  - d. Relationship to or impact on other projects;
  - e. Regulatory implications;
  - f. Impact on national headquarters and regions;
  - g. Ability to meet staffing, schedule, and budget plan;
  - h. Procured hardware and software availability;
  - i. System complexity and reliability;
  - j. Technical, policy, and programmatic constraints;
  - k. Operational implementation;
  - l. Cost/dollar risk of system failure or non-implementation;
  - m. Risk mitigation and management.

**Monitoring and Controlling Mechanisms.** This section defines the reporting mechanisms, report formats, information flows, review and audit mechanisms, and other tools and techniques to be used in monitoring and controlling adherence to the plan.

1. Project monitoring should occur at the level of work packages. Include the relationship of monitoring and controlling mechanisms to the project support functions.
2. Include the following:
  - a. progress monitoring activities, procedures, measures, reports,
  - b. periodic status meetings,
  - c. key measures identification/definition;
  - d. task completion metrics for each schedule task and WBS element;
  - e. tracking status of resources and budget metrics;
  - f. actual performance versus planned performance comparison;
  - g. change management description (requirements, system configuration).
  - h. Subcontractor management
  - i. Product/system improvement process

**Project Startup Planing:** Project cost estimation, support resources, hardware resources, training, staffing. This includes specifying the numbers and types of personnel required to conduct the project and their required skill levels, estimated effort in man-hours, start times, duration of need, and methods for obtaining, training, retaining, and phasing out of personnel.

**Project Management Planning – Checklist, Template, Guidelines**  
**Prepared by Sid Snook, June 19, 2003**

**Technical Process.**

This section specifies the technical methods, tools, and techniques to be used on the project. In addition, planning for project documentation project support functions, quality assurance, configuration management, and developmental testing, acceptance testing, implementation/rollout, user training.

**Methods, Tools, Techniques.** This section specifies the development methodology(s), programming languages, and other notations, tools, techniques, and methods to be used to specify, requirements, design, build, implementation, testing, integration, documentation, delivery, modification, or maintenance (error correction/enhancements) of the project deliverables/system/product.

1. In addition, the technical regulations, standards, policies, and procedures governing development or modification or both of the work products and project deliverables should be included, either directly or by reference to other documents.
2. Project development should be consistent with the organization's documented System Development Life Cycle or any organizational development standards or guidelines.
3. Include or reference any additional standard operating procedures, standards, work instructions, and checklists.
4. Include any project specific forms (e.g., Problem Report Form, Engineering Enhancement Form, and Technical Review Checklists).
5. Define and document the specific project technical processes including the following:
  - a. Exceptions,
  - b. Additions,
  - c. Deviations,
  - d. Or modifications to/from the approved project development procedures documented (if any);
  - e. Project development, test, and target "live"/production environments (hardware and software; including any migrations/promotions between these environments);
  - f. Off-the-shelf vendor required/supplied software packages;
  - g. DBMSs,
  - h. Compilers,
  - i. Communication packages,
  - j. CASE tools,
  - k. Preprocessors.
6. Identification of computer system engineering methods, tools, techniques, and engineering design methodology to be used (e.g., eXtreme, object-oriented, function-oriented, data/information-oriented, real-time oriented, object-oriented, formal-language oriented).
7. Development methods, methodologies, tools and environment (e.g., standard tools/methods, or external developer or subcontractor approaches to development and project management) should be documented.
8. Include a project manager assessment of method/methodologies and tools appropriateness in ensuring a successful project outcome.
9. Include a description of (or reference to) the project life cycle (e.g., eXtreme, monolithic waterfall, overlapping waterfall, spiral, concurrent releases, incremental serial builds, single prototype/overlapping waterfall, rapid-prototyping, agile, rapid application development [RAD]).

**Project Documentation.** This section contains either directly or by reference, the documentation plan for the project.

1. The documentation plan specifies the documentation deliverable requirements, and the milestones, baselines, reviews, and signoffs/approvals.
2. The documentation plan may also contain a style guide, naming conventions and documentation formats. The documentation plan provides a summary of the schedule and resource requirements for the documentation effort.
3. Include or reference procedures for document/deliverables reviews, baselines, signatures, style guide, standards and conventions.

## Project Management Planning – Checklist, Template, Guidelines

Prepared by Sid Snook, June 19, 2003

**Project Support Functions.** This section contains either directly or by reference, plans for the supporting functions for the project.

1. This support may be provided and the responsibility of organizations other than the development organization, however all applicable organizations should be identified and documented for completeness of this plan and agreement of the supporting organization.
2. These functions may include, but are not limited to requirements, development, testing, training, maintenance, configuration management, quality assurance, implementation, verification/validation, operational/business support.
3. Plans for project support functions should be developed to a level of detail consistent with the other sections of the plan. In particular, the responsibilities, resource requirements, schedules, and budgets for each supporting function shall be specified.

The nature and type of support functions required will vary from project to project; however, the absence of the following planning information should be explicitly justified in project plans that do not include them: quality assurance, configuration management, validation/testing, user acceptance, maintenance.

**Project Development Folder.** This addresses establishment and maintenance of an informal project development folder/repository(ies) including items such as: informal development notes, planning data, engineering working data, unit test data, standards/conventions, technical walkthroughs, meeting minutes.

### **Work Packages, Schedule, and Budget**

This section specifies the work packages, identifies dependency relationships among them, states the resource requirements, and provides the allocation of budget and resources to work packages, and establish a project schedule.

**WBS/Work Packages.** This section specifies the work packages for the activities and tasks that must be completed in order to satisfy the project agreement. Each work package shall be uniquely identified; identification may be based on a numbering scheme and descriptive titles. A diagram depicting the breakdown of activities into sub-activities and tasks (a work breakdown structure) may be used to depict hierarchical relationships among work packages

**Dependencies.** This section specifies the ordering relations among work packages to account for interdependencies among them and dependencies on external events. Techniques such as dependency lists, activity networks, and the critical path method may be used to depict dependencies among work packages.

### **Completion Resource Requirements.**

1. This section provides, as a function of time, estimates of the total resources required to complete the project.
2. Typical resources that should be specified include:
  - a. numbers and types of personnel,
  - b. test computers/ peripherals,
  - c. data base management systems,
  - d. CASE tools,
  - e. Compilers,
  - f. development environment cost,
  - g. documentation,
  - h. testing,
  - i. operational/target environment(s) cost,
  - j. computer time,
  - k. support software,
  - l. support hardware,
  - m. office/laboratory facilities,
  - n. vendor/contractor identification/costs,
  - o. travel,
  - p. and, maintenance costs.

**Budget and resource Allocation.** This section specifies the allocation of budget and resources to the various project functions, activities, WBS elements, or tasks.

**Schedule.** This section provides the schedule for the various project functions, activities, and tasks, taking into account the precedence relations and the required milestone dates.

1. Project life cycle model (e.g., waterfall, spiral, eXtreme) and sequencing of phases (e.g., concept of operations, proof of concept, requirements, design, coding, testing, integration, acceptance, deployment, maintenance)
2. Schedules may be expressed in absolute calendar time or in increments relative to a key project milestone. Include all required/appropriate milestones, task/activities, delivery dates, informal/formal reviews, Engineering/Technical, and Product Delivery Reviews for each life cycle phase.

**Project Management Planning – Checklist, Template, Guidelines**  
**Prepared by Sid Snook, June 19, 2003**

**Signatures and Approvals.**

As required and appropriate for the specific organization and/or project.