

**How to Make Life Easier: A simple Approach To
Introducing Project Management Into Any Organization***

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How to Make Life Easier: A simple Approach To Introducing Project Management Into Any Organization

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ABSTRACT

Project Management is evolving as a comprehensive set of techniques, methods and skills covering a broad range of topics. No longer just associated with planning, scheduling and controlling resources, project management includes many aspects of general business and human factors administration. It often includes aspects of social psychology such as leadership, teamwork, communication skills, conflict management, negotiation and even statesmanship. As project management has become more complex, teaching project management and introducing project management techniques have also become larger tasks. As with other complex issues, however, the introduction of project management into organizations must be simplified in order to be successful. The usage of Project Management Plans offers a simple approach to introducing any organization, in any cultural or professional environment, to project management. PMPs can provide immediate benefits to project-oriented companies, and truly can make our life easier, as project management professionals.

Introduction

The Project Management Plan (PMP) is a combination of two documents which are often prepared separately -- the traditional Management Plan which describes management strategies, policies, systems and approaches, and the Project Plan, which includes work breakdown structures, schedules, logic and cost estimates. The PMP is more comprehensive than either a Management Plan or Project Plan, reflecting an awareness that the people, the systems and the detailed planning are all critical to project success.

PMPs have been required by the U.S. Department of energy on large projects for years. They have been successfully utilized on projects ranging over a wide variety of industries, organizations and project types. Just as project management applies across industries and organizations (and political and cultural boundaries), PMPs can also be used in this broader context.

A simplified format and approach for PMP development is presented in the paragraphs below. How this simplified approach can be used to introduce or improve project management in any organization is presented, along with a summary of benefits. Examples from the USA are discussed.

PMPs to Introduce Project Management Into Organizations

The PMP can be used as a very simplified approach to introducing project management into any organization, whether managers are familiar or not with project management concepts. By requiring a PMP for every project, top managers can subtly require all project managers in the organization to learn and apply the principles of project management.

When the PMP requirement and format are introduced, to (i.e., WBS, Schedules, Organization Plan, Quality Plan, etc.) project managers are forced to address each PMP element, which requires that they learn, understand and plan for its implementation.

Where project management is being introduced into an organization whose employees are unfamiliar with the techniques, the PMP provides a basis and framework for teaching project management. For instance, the PMP might become the output of a series of PM workshops.

PMPs can also be introduced in project-oriented organizations which may already be using many aspects of PM, thus providing a common planning format. Frequently in organizations which have long used Project Management techniques, some managers are less versed in some aspects of PM (for instance, risk planning or organization development). In those cases PMPs promote more comprehensive application of Project Management principles.

The Project Management Plan

Figure 1 displays typical contents of a PMP. Most elements are common subjects of project planning and are addressed in planning documents. Several topics, however, such as organizational development, health and safety planning, and risk planning, may be new to some organizations. Most importantly PMPs provide a framework for comprehensive project planning. It is important to note, however, that PMP formats for individual organizations, industries or cultures must be tailored to fit specific organizational needs.

<u>PROJECT MANAGEMENT PLAN CONTENTS</u>
1. Executive Summary
2. Introduction & Background
3. Mission & Objectives
4. Work Breakdown Structure
5. Workscope
6. Planning Basis
7. Logic & Schedules
8. Resources, Cost Estimates & Financial Plans
9. Risk Analysis & Contingency Plans
10. Organization Development Plan
11. Procurement & Logistics Plan
12. Quality & Productivity Plan
13. Environmental, Safety & Health Protection Plan
14. Security Plan
15. Project Administration & Control Plan
16. Document Control & Configuration Management Plan
17. Appendices

Figure 1 - Typical PMP Contents

Project Management Plan Contents

The following paragraphs summarize contents for the seventeen topics outlined in Figure 1.

Executive Summary

Just as executive summaries are common practice in management reports, they are also called for in a PMP. The PMP executive summary includes a summary of the project's scope, schedule and cost estimate, and lists critical success factors. Key management approaches should also be identified. The summary is normally kept to a single page.

Introduction & Background

An introduction to both the project and the PMP document is included. Background information, including project sponsorship, history and status can provide important perspective. External factors key to the success or health of the project can also be reviewed. Introductions are always kept short, with additional information referenced or included in the appendix.

Mission & Objectives

The purpose or mission of the project is stated in one or two paragraphs, followed by a set of specific objectives. The mission statement is all-encompassing, establishing why the project exists. Project objectives are outlined as specific goals to be accomplished, and to which status can be applied. Objectives can be established for every aspect of the project, including scope of work, quality, management, organization, systems, safety, cost, schedule and overall completion of the project.

Work Breakdown Structure

The Work Breakdown Structure (WBS) is a product-oriented hierarchy of the project scope of work, and is embodied in a numbering structure that provides a method for organizing and planning project activity. Most importantly the WBS is frequently prepared in a graphic "box diagram" which can greatly assist in identifying and planning all project work. The WBS "chart" displays project elements and tasks in levels and boxes, representing smaller and smaller parts of the project.

Workscope

The workscope section of a PMP details the WBS in narrative form. This section includes narrative descriptions of all elements of the project, clearly identifying products or services to be provided. The workscope addresses project phases and can include special plans associated with R & D, engineering, design, construction, manufacturing, startup or transition. The workscope section may also describe systems management activities, including systems engineering and integration. Often the WBS and workscope are prepared in parallel, in outline form; the narrative description of the work is then called a WBS Dictionary.

Planning Basis

The planning basis section provides for the documentation of key factors (basic premises) considered during preparation of the PMP. This section can contain discussion of project deliverables and end-products, requirements, constraints, approaches or strategies, key assumptions, and specifically excluded scope. Documenting these factors in the PMP can dramatically contribute to better understanding and communication among project participants.

Logic & Schedules

This section of the PMP includes schedules, and the logic and network plans necessary to develop them. Critical path-oriented network planning should be the basis for all schedules. Networks however should be neither overly simple or complex. The PMP should describe the logic applied, and reference network plans contained in the Appendix or elsewhere. Milestone schedules, networks, bar charts or activity listings can be included in the PMP as desired.

Resources, Cost Estimates & Financial Plans

The Primary resource planning issues are identification and qualification of resources required; availability of those resources; quantification, or amount of the resources required; and timing, or allocation of the resources needed. All resources to accomplish the project are addressed, including personnel, supplies, materials, facilities, utilities, information and expertise. Cost estimates for resources required, and projected dates needed, are included in the PMP. This section includes a cost estimate, normally in a table format, including a summary cost for each major task or element of the project. Financial plans include cash flow projections, funding plans and financial management issues. Where possible budgets are included. For resources and cost estimates, details can be referenced, with summary information in the PMP.

Risk Analysis & Contingency Plan

This section of the PMP provides an opportunity to consider project risks and to develop contingency plans to offset those risks. Each element of the project can be assessed for risk, based on the status of technology being utilized, status of planning and status of the design (project stage). Suggested topics for this section include risk identification, risk analysis, risk minimization plans, contingency plans and reserves.

Organization Development Plan

This section describes the following organization-related issues: key personnel, organization structure, responsibilities, authorities, interfaces, and personnel development. These are issues related to organizing and managing the human factors on a project, which are receiving more and more attention as critical to project success. The personnel development section, for instance, can describe plans for developing teamwork and effective communication, as well as for addressing needs of individual project participants (i.e., professional development, training, motivation, etc.)

Procurement & Logistics Plan

Advance planning of the contracting and procurement activities is critical on many projects. This section of the PMP includes plans associated with subcontracting, procurement and logistics. In addition logistics issues related to equipment, supplies or materials can also be planned in advance to ensure manufacturing, transportation, and storage by cost efficient, safe and timely means.

Quality & Productivity Plan

Quality and productivity improvement objectives are established and planned for in this section. For instance, the implementation of Total Quality Management (TQM) might be described. Quality management systems or procedures to be utilized on the project can be established, as well as the methods to be used for Quality Assurance (QA) and Quality Control (QC). Plans for Technical Performance Measurement (TPM) can also be included in this section of the PMP. The strategies to be used for productivity improvement, reductions in the time and costs to accomplish project objectives, including when and how they will be used, can also be described.

Environmental, Safety and Health Protection Plan

The PMP should identify environmental protection, safety and health (ES&H) protection laws, regulations and requirements which must be satisfied. The plans for complying with those requirements can then be described. Specific environmental and safety issues on the project can be identified and discussed. Systems, procedures and responsibilities for ensuring ES&H protection should be identified.

Security Plan

Security issues which need to be addressed on a project include physical security, property protection and information security. If physical access must be restricted, for instance on many construction projects, then plans and systems must be established. Security to ensure against loss, theft or damage of property, including computer equipment, should be considered and provided for. Information security is needed to protect against loss or damage to project data, databases or information systems.

Project Administration & Control Plan

This section describes the procedures, processes and methods to be used to determine project status, assess performance and report progress. Topics may include work authorization, cost accounting, cost and schedule performance measurement and change control. Project administration plans and responsibilities for reporting, meetings, communications and record keeping should also be included.

Document Control/Configuration Management Plan

All major projects involve documents and configuration control issues. This section of the PMP identifies the documents to be prepared on the project, and establishes the administrative approaches, systems, procedures and responsibilities for managing that documentation. Document storage and access issues are also included. Configuration management includes identifying and documenting the functional and physical characteristics of the project products, facilities or systems; and controlling changes to those items and associated documents. Plans and systems for project configuration management can be included in the PMP, or in a referenced document.

Appendices

Included in appendices are referenced technical data, support exhibits or charts, lists, detailed schedules, procedures, examples, other referenced plans or any other documents desired.

Multicultural Examples from the U.S.A.

At the Idaho National Engineering Laboratory (INEL), one of the U.S. Department of Energy's major research and engineering labs, PMPs have been used on projects since 1985. Approximately 10,000 people work at the INEL on R&D, engineering and construction projects related to nuclear energy, reactor safety and operations, radioactive waste storage and management, environmental monitoring and cleanup, non-nuclear energy, materials development and testing, and defense-related activity. Projects range in size from tiny contracts to multi-million dollar programs. They involve engineers, scientists, computer science professionals, administrators and various craft labor. Foreign scientists have been involved in major nuclear research programs. All types and sizes of projects at the INEL have utilized and benefited from PMPs.

At the Superconducting Super Collider Laboratory (SSCL), the U.S. DOE's newest major research laboratory, located near Dallas, Texas, PMPs are also being utilized for a variety of

projects and organizations. The SSCL is a truly international research and engineering operation, involving scientists and engineers from over 20 countries. On two major projects, scientists from America, Italy, Canada, Japan, Russia, and many other countries are collaborating to design, fabricate and commission particle detectors costing in excess of \$500 million each. PMPs are being developed for these two projects, as well as many smaller projects and tasks. Teamwork, communication and integrated planning are some of the benefits of PMP development at the SSCL.

PMPs also exist at other U.S. DOE laboratories, and among U.S. government contractors. Large project-oriented organizations, including the U.S. Army Corps of Engineers, and EG&G Incorporated (a major US. government contractor with 50,000 employees worldwide) are also benefitting from systematic implementation of PMPs.

Benefits

Benefits from using PMPs include the following:

- Consistency in project planning and control organization-wide
- Better communication
- Better planning of projects
- More comprehensive project plans
- Improved usage of resources
- Better project performance (fewer cost & schedule problems)
- Better customer relations
- Better-educated project managers

The PMP is a simple approach to achieving the benefits mentioned, in a short time frame. PMPs not only improve the odds for achieving project goals, but also enhance project manager's image and credibility as they use this strategic planning approach.

Return on Investment

Investment in PMP standards and training can range from several thousand dollars to several hundred thousand, depending on the size of organization, number of projects and project managers, and extent of the training program. Payback, however has been proven to be very rapid, based on both productivity savings and new work (due to better project manager performance). In Idaho, satisfied customers awarded follow-on contracts worth millions of dollars to companies using PMP'S, because of improved performance.

Conclusion: How to Make Life Easier

Project Management Plans (PMPs) are a proven approach to improved and more comprehensive project planning. By developing a standard PMP format and approach, companies can greatly simplify the introduction or improvement of project planning throughout their organizations. Because some project professionals will need to learn more about some of the project management elements of the PMP, training must also be made available.

We have introduced a comprehensive set of subjects to be included in a standard PMP. Individual organizations may need to adjust the proposed format to meet their specific needs, technical situation or country culture. Within any context, a well-thought-out PMP sets the background for making life easier throughout the entire project cycle. The PMP approach, however, is quite simple and straightforward, and can be applied in any country, culture, or technical setting.

References

Dinsmore, Paul and Pells, David L. "Project Management Plans: An Approach to Comprehensive Planning for Complex Projects", Chapter in Project Management Handbook, American Management Association, 1992.

Pells, David L. "Project Management Upgrade at the Idaho National Engineering Laboratory". 1989 Proceedings of PMI/INTERNET Joint Symposium, Project Management Institute, Drexel Hill, PA 1989, P. 363-366.