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THE PROJECT MANAGEMENT INSTITUTE STANDARDS-SETTING PROCESS

a

The following procedure was established as Institute policy by a vote of the Project Management Institute (PMI) Board of Directors at its October 1993 meeting.

A.1 PMI Standards Documents

PMI Standards Documents are those developed or published by PMI that describe generally accepted practices of project management, specifically:

- *A Guide to the Project Management Body of Knowledge* (PMBOK).
- Project Management Body of Knowledge Handbooks.

Additional documents may be added to this list by the Director of Standards subject to the advice and consent of PMI's Professional Development Group (PDG). Standards Documents may be original works published by PMI or they may be publications of other organizations or individuals.

Standards Documents will be developed in accordance with the "Code of Good Practice for Standardization" developed by the International Organization for Standardization (ISO).

A.2 Development of Original Works

Standards Documents that are original works to be published by PMI will be developed as follows:

- Prospective developer(s) will submit a proposal to the Director of Standards. The Director may also request such proposals. The Director will accept or reject such proposals and will inform the proposer as to the rationale for the decision. If the proposal requires funding in excess of that budgeted for standards development, the Director will submit the proposal to the PMI Board before approving it.
- The Director will support the developer's efforts so as to maximize the probability that the end product will be accepted.
- When the proposed material has been completed to the satisfaction of the developer, the developer will submit the material to the Director of Standards. The Director will appoint at least three knowledgeable individuals to review and comment on the material. Based on comments received, the Director will decide whether to accept the material as an *Exposure Draft.* Developer(s) will be required to sign PMI's standard copyright release prior to publication of the Exposure Draft.
- Exposure Drafts will be published under the aegis of the PMI Publications Board and must meet the standards of that group regarding typography and style.
- Exposure Drafts will be generally available to anyone who wishes to review the material. The Director of Standards will define a review period of not less than six months for all Exposure Drafts. Each Exposure Draft will include a notice asking for comments to be sent to the Director and noting the expiration of the review period.

- At the conclusion of the review period, the Director of Standards will review comments received and will work with the developer(s) and others as needed to incorporate appropriate comments. If the comments are major, the Director may elect to repeat the Exposure Draft review process. The Director will promptly submit proposed Standards Documents to the PDG for review and approval. The PDG may (a) approve the document as submitted; (b) reject the document; or (c) require a repetition of the Exposure Draft review process.

A.3 Adoption of Non-Original Works as Standards

Standards Documents that are the work of other organizations or individuals will be handled as follows:

- Anyone may submit a request to the Director of Standards to consider a non-PMI publication as a PMI Standard. The Director will appoint at least three knowledgeable individuals to consider the material. If the comments received are positive, the Director will prepare a proposal for the PDG to consider regarding a prospective relationship with the owner(s) of the material.
- The Director's proposal shall address the review and approval process, possible effects on Certification and Accreditation, whether or not PMI Board action is needed, and any financial considerations.

Evolution of PMI's *A Guide to the Project Management Body of Knowledge*

b

B.1 Initial Development

PMI was founded in 1969 on the premise that there were many management practices that were common to projects in application areas as diverse as construction and pharmaceuticals. By the time of the Montreal Seminar/Symposium in 1976, the idea that such common practices might be documented as "standards" began to be widely discussed. This led in turn to consideration of project management as a distinct profession.

It was not until 1981, however, that the PMI Board of Directors approved a project to develop the procedures and concepts necessary to support the profession of project management. The project proposal suggested three areas of focus:

- The distinguishing characteristics of a practicing professional (ethics).
- The content and structure of the profession's body of knowledge (standards).
- Recognition of professional attainment (accreditation).

The project team thus came to be known as the Ethics, Standards and Accreditation Management Group (ESA). The ESA Management Group consisted of the following individuals:

- Matthew H. Parry, Chair
- David C. Aird
- Frederick R. Fisher
- David Haeney
- Harvey Kolodney
- Charles E. Oliver
- William H. Robinson
- Douglas J. Ronson
- Paul Sims
- Eric W. Smythe

This group was assisted by more than 25 volunteers in several local chapters. The Ethics statement was developed and submitted by a committee in Washington, D.C., chaired by Lew Ireland. The Time Management statement was developed through extensive meetings of a group in Southern Ontario, including Dave Mac-Donald, Dave Norman, Bob Spence, Bob Hall and Matt Parry. The Cost Management statement was developed through extensive meetings within the cost department of Stelco under the direction of Dave Haeney and Larry Harrison. Other statements were developed by the ESA Management Group. Accreditation was taken up by John Adams and his group at Western Carolina University, which resulted in the development of accreditation guidelines and a program for the certification of Project Management Professionals under the guidance of Dean Martin.

The results of the ESA Project were published in a Special Report in the *Project Management Journal* in August 1983. The report included:

- A Code of Ethics plus a procedure for code enforcement.
- A standards baseline consisting of six major knowledge areas: Scope Management, Cost Management, Time Management, Quality Management, Human Resources Management, and Communications Management.
- Guidelines for both accreditation (recognition of the quality of programs provided by educational institutions) and certification (recognition of the professional qualifications of individuals).

This report subsequently served as the basis for PMI's initial Accreditation and Certification programs. Western Carolina University's Masters Degree in Project Management was accredited in 1983 and the first Project Management Professionals (PMPs) were certified in 1984.

B.2 1986–87 Update

Publication of the ESA Baseline Report gave rise to much discussion within PMI about the adequacy of the standards. In 1984, the PMI Board of Directors approved a second standards-related project "to capture the knowledge applied to project management ... within the existing ESA framework." Six committees were then recruited to address each of the six identified knowledge areas. In addition, a workshop was scheduled as part of the 1985 Annual Seminar/Symposium.

As a result of these efforts, a revised document was approved in principle by the PMI Board of Directors and published for comment in the *Project Management Journal* in August 1986. The primary contributors to this version of the document were:

- R. Max Wideman, Chair (during development)
- John R. Adams, Chair (when issued)
- Joseph R. Beck
- Peter Bibbes
- Jim Blethen
- Richard Cockfield
- Peggy Day
- William Dixon
- Peter C. Georgas
- Shirl Holingsworth
- William Kane
- Colin Morris
- Joe Muhlberger
- Philip Nunn
- Pat Patrick
- David Pym
- Linn C. Stuckenbruck
- George Vallance
- Larry C. Woolslager
- Shakir Zuberi

In addition to expanding and restructuring the original material, the revised document included three new sections:

- **Project Management Framework** was added to cover the relationships between the project and its external environment and between project management and general management.
- **Risk Management** was added as a separate knowledge area in order to provide better coverage of this subject.
- **Contract/Procurement Management** was added as a separate knowledge area in order to provide better coverage of this subject.

Subsequently, a variety of editorial changes and corrections were incorporated into the material, and the PMI Board of Directors approved it in March 1987. The final manuscript was published as a stand-alone document titled *The Project Management Body of Knowledge* in August 1987.

B.3 1996 Update

Discussion about the proper form, content, and structure of PMI's key standards document continued after publication of the 1987 version. In August 1991, PMI's Director of Standards, Alan Stretton, initiated a project to update the document based on comments received from the membership. The revised document was developed over several years through a series of widely circulated working drafts and through workshops at the PMI Seminars/Symposia in Dallas, Pittsburgh, and San Diego.

In August 1994, the PMI Standards Committee issued an Exposure Draft of the document that was distributed for comment to all 10,000 PMI members and to more than 20 other professional and technical associations.

This document represents the completion of the project initiated in 1991. Contributors and reviewers are listed in Appendix C. A summary of the differences between the 1987 document and the 1996 document is included in the Preface of the 1996 edition.

CONTRIBUTORS AND REVIEWERS

C

The following individuals contributed in many different ways to various drafts of this document. PMI is indebted to them for their support.

C.1 Standards Committee

The following individuals served as members of the PMI Standards Committee during development of this update of the PMBOK document:

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C.2 Contributors

In addition to the members of the Standards Committee, the following individuals provided original text or key concepts for one or more sections in the chapters indicated:

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- Keely Brunner, Ball Aerospace (Chapter 7, Project Cost Management)
- Louis J. Cabano, Pathfinder, Inc. (Chapter 5, Project Scope Management)
- David Curling, Loday Systems (Chapter 12, Project Procurement Management)
- Douglas Gordon, Special Projects Coordinations (Chapter 7, Project Cost Management)
- David T. Hulett, D.T. Hulett & Associates (Chapter 11, Project Risk Management)
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- Hadley Reynolds, Reynolds Associates (Chapter 2, The Project Management Context)

- Agnes Salvo, CUNA Mutual Insurance (Chapter 11, Project Risk Management)
- W. Stephen Sawle, Consultants to Management, Inc. (Chapter 5, Project Scope Management)
- Leonard Stolba, Parsons, Brinckerhoff, Douglas & Quade (Chapter 8, Project Quality Management)
- Ahmet Taspinar, MBP Network (Chapter 6, Project Time Management)
- Francis M. Webster (Chapter 1, definition of project)

C.3 Reviewers

In addition to the Standards Committee and the contributors, the following individuals provided comments on various drafts of this document:

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- Rebecca Winston, EG&G Idaho Inc.
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C.4 Production Staff

Special mention is due to the following employees of PMI Communications:

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d

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2. Murphy, Patrice L. 1989. Pharmaceutical Project Management: Is It Different? *Project Management Journal* (September).

3. Muench, Dean. 1994. *The Sybase Development Framework.* Oakland, Calif.: Sybase Inc.

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5. Pfeffer, Jeffrey. 1992. *Managing with Power: Politics and Influence in Organizations.* HBS Press. Quoted in [6].

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7. International Organization for Standardization. 1994. *Code of Good Practice for Standardization (Draft International Standard).* Geneva, Switzerland: ISO Press.

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Chapter 3. Project Management Processes
1. *The American Heritage Dictionary of the English Language*, Third Edition. 1992. Boston, Mass.: Houghton Mifflin Company.

Chapter 4. Project Integration Management
No notes for this chapter.

Chapter 5. Project Scope Management
1. Turner, J. Rodney, *op cit*, Ch. 1.

2. İyigün, M. Güven. 1993. A Decision Support System for R&D Project Selection and Resource Allocation Under Uncertainty. *Project Management Journal* (December).

3. Scope Definition and Control, Publication 6–2, p. 45. 1986 (July). Austin, Tex.: Construction Industry Institute

Chapter 6. Project Time Management
No notes for this chapter.

Chapter 7. Project Cost Management
No notes for this chapter.

Chapter 8. Project Quality Management
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2. *Ibid.*

3. *Ibid.*

4. *Ibid.*

5. *Ibid.*

Chapter 9. Project Human Resource Management
No notes for this chapter.

Chapter 10. Project Communications Management
No notes for this chapter.

Chapter 11. Project Risk Management
No notes for this chapter.

Chapter 12. Project Procurement Management
No notes for this chapter.

APPLICATION AREA EXTENSIONS

e

E.1 Need for Application Area Extensions

Application area extensions are necessary when there are generally accepted practices for a category of projects (an application area) that are not generally accepted across the full range of project types. Application area extensions reflect:

- Unique or unusual aspects of the project environment that the project management team must be aware of in order to manage the project efficiently and effectively.
- Common practices which, if followed, will improve the efficiency and effectiveness of the project (e.g., standard work breakdown structures).

Application area-specific practices can arise as a result of many factors, including, but not limited to—differences in cultural norms, technical terminology, societal impact, or project life cycles. For example:

- In construction, where virtually all work is accomplished under contract, there are common practices related to procurement that do not apply to all categories of projects.
- In biosciences, there are common practices driven by the regulatory environment that do not apply to all categories of projects.
- In government contracting, there are common practices driven by government acquisition regulations that do not apply to all categories of projects.
- In consulting, there are common practices created by the project manager's sales and marketing responsibilities that do not apply to all categories of projects.

Application area extensions are additions to the core material of Chapters 1 through 12, not substitutes for it. Extensions are expected to be organized in a fashion similar to this document, i.e., by identifying and describing the project management processes unique to that application area. In different application areas, there may be a need to identify additional processes, to subdivide common processes, to define different sequences or process interactions, or to add elements to the common process definitions.

E.2 Criteria for Development

Extensions will be developed for those application areas that meet the following criteria:

- There is a substantial body of knowledge for the application area that is both project-oriented and unique or nearly unique to that area.
- There is an identifiable organization (e.g., a PMI Specific Interest Group or another professional or technical association) willing to commit the necessary resources to support the PMI Standards Committee with developing and maintaining the material.
- The additional material developed is able to pass the same level of rigorous review as the core material.

ADDITIONAL SOURCES OF INFORMATION ON PROJECT MANAGEMENT

f

Project management is a growing, dynamic field with books and articles on the subject published regularly. The entities listed below provide a variety of products and services that may be of use to those interested in project management.

F.1 Professional and Technical Organizations

This document was developed and published by the Project Management Institute. PMI can be contacted at:

Project Management Institute	Phone: 610/734-3330
130 South State Road	Fax: 610/734-3266
Upper Darby, PA 19082	E-mail: pmieo@ix.netcom.com
USA	World Wide Web: www.pmi.org

PMI currently has cooperative agreements with the following organizations:

AACE International
Phone: 304/296-8444   Fax: 304/291-5728

Australian Institute of Project Managers (AIPM)
Phone: +61-02-9960-0058   Fax: +61-02-9960-0052

Construction Management Association of America (CMAA)
Phone: 703/356-2622   Fax: 703/356-6388

Engineering Advancement Association of Japan (ENAA)
Phone: +81-3-3502-4441   Fax: +81-3-3502-5500

Institute of Industrial Engineers (IIE)
Phone: 770/449-0460   Fax: 770/263-8532

Institute of Project Management (IPM-Ireland)
Phone: +353-1-661-4677   Fax: +353-1-661-3588

International Project Management Association (IPMA)
Phone: +45-45-76-46-76   Fax: +45-45-76-80-20

Korean Institute of Project Management and Technology (PROMAT)
Phone: +822-510-5835   Fax: +822-510-5380

Performance Management Association (PMA)
Phone: 714/443-0373   Fax: 714/443-0374

Project Management Institute of Canada
Phone: Fax: 403/281-3068

Russian Project Management Association (SOVNET)
Phone: +7-095-133-24-41   Fax: +7-095-131-85-29

Western Australian Project Management Association, Inc. (WAPMA)
Phone: 619/383-3849   Fax: 619/383-3849

In addition, there are numerous other organizations in related fields that may be able to provide additional information about project management. For example:

American Society for Quality Control
Construction Industry Institute
National Association for Purchasing Management
National Contract Management Association
Society for Human Resource Management
American Society of Civil Engineers

Current contact information for these and other professional and technical organizations worldwide can generally be found in your local library.

F.2 Commercial Publishers

Many commercial publishers produce books on project management and related fields. Commercial publishers that regularly produce such materials include:

Addison-Wesley
AMACOM
Gower Press
John Wiley & Sons
Marcel Dekker
McGraw-Hill
Prentice-Hall
Probus
Van Nostrand Reinhold

Most project management books from these publishers are available from PMI. Many of the books available from these sources include extensive bibliographies or lists of suggested readings.

F.3 Product and Service Vendors

Companies that provide software, training, consulting, and other products and services to the project management profession often provide monographs or reprints. PMI publishes an annual directory of such vendors in *PM Network* and similar lists are often available from the other organizations listed in F.1.

F.4 Educational Institutions

Many universities, colleges, and junior colleges offer continuing education programs in project management and related disciplines. Some of these institutions also offer graduate or undergraduate degree programs. PMI publishes an annual directory of such programs in *PM Network*.

SUMMARY OF PROJECT MANAGEMENT KNOWLEDGE AREAS

g

Project Integration Management

A subset of project management that includes the processes required to ensure that the various elements of the project are properly coordinated. It consists of:

- Project plan development—taking the results of other planning processes and putting them into a consistent, coherent document.
- Project plan execution—carrying out the project plan by performing the activities included therein.
- Overall change control—coordinating changes across the entire project.

Project Scope Management

A subset of project management that includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. It consists of:

- Initiation—committing the organization to begin the next phase of the project.
- Scope planning—developing a written scope statement as the basis for future project decisions.
- Scope definition—subdividing the major project deliverables into smaller, more manageable components.
- Scope verification—formalizing acceptance of the project scope.
- Scope change control—controlling changes to project scope.

Project Time Management

A subset of project management that includes the processes required to ensure timely completion of the project. It consists of:

- Activity definition—identifying the specific activities that must be performed to produce the various project deliverables.
- Activity sequencing—identifying and documenting interactivity dependencies.
- Activity duration estimating—estimating the number of work periods which will be needed to complete individual activities.
- Schedule development—analyzing activity sequences, activity durations, and resource requirements to create the project schedule.
- Schedule control—controlling changes to the project schedule.

Project Cost Management

A subset of project management that includes the processes required to ensure that the project is completed within the approved budget. It consists of:
- Resource planning—determining what resources (people, equipment, materials) and what quantities of each should be used to perform project activities.
- Cost estimating—developing an approximation (estimate) of the costs of the resources needed to complete project activities.
- Cost budgeting—allocating the overall cost estimate to individual work items.
- Cost control—controlling changes to the project budget.

Project Quality Management

A subset of project management that includes the processes required to ensure that the project will satisfy the needs for which it was undertaken. It consists of:
- Quality planning—identifying which quality standards are relevant to the project and determining how to satisfy them.
- Quality assurance—evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards.
- Quality control—monitoring specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory performance.

Project Human Resource Management

A subset of project management that includes the processes required to make the most effective use of the people involved with the project. It consists of:
- Organizational planning—identifying, documenting, and assigning project roles, responsibilities, and reporting relationships.
- Staff acquisition—getting the human resources needed assigned to and working on the project.
- Team development—developing individual and group skills to enhance project performance.

Project Communications Management

A subset of project management that includes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. It consists of:
- Communications planning—determining the information and communications needs of the stakeholders: who needs what information, when will they need it, and how will it be given to them.
- Information distribution—making needed information available to project stakeholders in a timely manner.
- Performance reporting—collecting and disseminating performance information. This includes status reporting, progress measurement, and forecasting.
- Administrative closure—generating, gathering, and disseminating information to formalize phase or project completion.

Project Risk Management

A subset of project management that includes the processes concerned with identifying, analyzing, and responding to project risk. It consists of:

- Risk identification—determining which risks are likely to affect the project and documenting the characteristics of each.
- Risk quantification—evaluating risks and risk interactions to assess the range of possible project outcomes.
- Risk response development—defining enhancement steps for opportunities and responses to threats.
- Risk response control—responding to changes in risk over the course of the project.

Project Procurement Management

A subset of project management that includes the processes required to acquire goods and services from outside the performing organization. It consists of:

- Procurement planning—determining what to procure and when.
- Solicitation planning—documenting product requirements and identifying potential sources.
- Solicitation—obtaining quotations, bids, offers, or proposals as appropriate.
- Source selection—choosing from among potential sellers.
- Contract administration—managing the relationship with the seller.
- Contract close-out—completion and settlement of the contract, including resolution of any open items.