GAPPS

Global Alliance for Project Performance Standards

A Framework for Performance Based Competency Standards for Global Level 1 and 2 Project Managers

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Contents

Foreword

As project management has become a more widely recognized management approach, governments, individuals, and both public and private sector organizations have become interested in frameworks and standards that describe levels of acceptable workplace performance for project personnel.

The *Global Alliance for Project Performance Standards* (GAPPS), formerly known as the Global Performance Standards for Project Management Personnel Initiative, is a volunteer organization working to create such frameworks and standards by providing a forum for stakeholders from differing systems, backgrounds, and operating contexts to work together to address the needs of the global project management community.

These frameworks are intended to support the development and recognition of local standards and to provide a sound basis for mutual recognition and transferability of project management qualifications.

The GAPPS frameworks are intended to be used by businesses, academic institutions, training providers, professional associations, and government standards and qualifications bodies globally. Frameworks may be used "as is" to speed the development of local standards, or they may be adapted to local needs.

This document is the first of several. Future documents may address program managers, project sponsors, project team members, project management consultants, project management trainers, or other levels of project managers.

A Framework for
Performance Based Competency Standards
for Global Level 1 and 2 Project Managers

1.   Scope

This document contains a framework for performance based competency standards for two levels of project manager. The contents of this document may be used "as is" to expedite the process of standards development, may be tailored to reflect cultural differences or local practice, or may be mapped to other standards to facilitate transferability of qualifications.

The GAPPS Framework consists of:
- Performance based competency standards for two levels of the role of project manager.
- A detailed approach to differentiating the two roles or levels based upon project management complexity.
- Supporting material to aid in the application of the standards.

The two levels addressed, called Global Level 1 and Global Level 2, are differentiated by the management complexity of the project. Section 3 describes how to evaluate management complexity in the application of the GAPPS framework.

This framework is intended to be used to assess threshold competency — demonstration of the ability to do something at a standard considered acceptable in the workplace. It is applicable to Global Level 1 and Global Level 2 project managers in all fields of endeavor including, but not limited to: architecture, biotechnology, construction, design, education, engineering, financial services, government, government contracting, information systems, not-for-profit operations, pharmaceuticals, software, and telecommunications.

The GAPPS framework recognizes that Global Level 1 and Global Level 2 are a subset of the full range of project manager performance: entry-level project managers generally function at a level of management complexity below that required for Global Level 1 while highly complex projects may require a level of performance beyond that of a Global Level 2 project manager.

2.   Performance Based Competency Standards

2.1   Introduction

This section provides a brief overview of the subject of performance based competency standards (PBCS) for potential users of this document who are not familiar with the topic.

Competent comes from the Latin root *competere* which means "to be suitable." In today's workplace, the term "competent" is generally used to describe someone who is sufficiently skilled to perform a specified task or to fill a defined position — a competent physician, a competent salesperson, a competent plumber. Increasingly, organizations are interested in assessing the competency of individuals in order to guide employment and development decisions.

Broadly speaking, there are two major approaches to defining and assessing competency:

- *Attribute based* wherein personal attributes such as knowledge, skills, and other characteristics are identified and assessed. Competence is inferred based on the presence of the necessary attributes.
- *Performance based* wherein work outcomes and performance levels are identified and assessed. Competence is inferred based on the demonstrated ability to satisfy the performance criteria.

PBCS, also called occupational competency standards, are widely used throughout the world and have been developed within the context of government endorsed standards and qualifications frameworks in Australia (Department of Education, Science and Training), New Zealand (New Zealand Qualifications Authority), South Africa (South African Qualifications Authority), and the United Kingdom (Qualifications and Curriculum Authority). Although all of these approaches are focused primarily on *performance based* competency assessment, some approaches do include aspects of *attribute based* competency assessment.

2.2   Design of the GAPPS Framework

PBCS typically address at least the following two questions:

- What is usually done in this occupation, profession, or role by competent performers?
- What standard of performance is usually considered acceptable to infer competence?

In the GAPPS standards, these questions are answered by defining:

- **Units of Competency**
  A Unit of Competency defines a broad area of professional or occupational performance that is meaningful to practitioners and which is demonstrated by individuals in the workplace. The GAPPS Level 1 framework includes five Units of Competency while GAPPS Level 2 includes six.

- **Elements of Competency**
  Elements of Competency describe the key components of work performance within a Unit. They describe *what* is done by individuals in the workplace but do *not* prescribe *how* the work is done. For example, project managers must "define risks and risk responses for the project," but they can do it themselves or delegate the work to others. In addition, there are many different tools and techniques that they could use. The GAPPS Level 1 framework includes 18 Elements of Competency while GAPPS Level 2 includes 21.

- **Performance Criteria**
  Performance Criteria set out the type and/or level of performance required to demonstrate competence in each element. They describe observable results and/or actions in the workplace from which competent performance can be inferred. In the GAPPS framework, Performance Criteria can be satisfied in many different ways; there are no mandatory

approaches, tools, or methodologies. The GAPPS Level 1 framework includes 56 Performance Criteria while GAPPS Level 2 includes 64.

- **Range Statements**
  Range Statements help to ensure consistent interpretation of the Elements and the Performance Criteria by expanding on critical or significant aspects of them to enable consistent application in different contexts. Where the Range Statements contain lists, the lists are generally illustrative and not exhaustive.

Although some of the terms and definitions of the GAPPS framework described above differ in some respects from other PBCS, the overall approach is consistent and compatible with generally accepted practice within the field of competency development and assessment.

The Units, Elements, and Performance Criteria are not linear or sequential: there is no requirement that the work be done in any particular sequence or that the Performance Criteria be satisfied in any particular order. In addition, some Performance Criteria can be satisfied with relatively little effort while others will require a substantial commitment from the project manager over the full length of the project.

The Performance Criteria in this document focus on *threshold* performance — demonstration of the ability to do something at a standard considered acceptable in the workplace. They do not measure *superior* performance — what the best project managers do. Superior performers should, however, be able to satisfy the threshold criteria without difficulty.

The GAPPS standards include the minimum number of Performance Criteria needed to infer competence. As a result, a candidate must satisfy all of the Performance Criteria in the applicable Units in order to be viewed as competent. In addition, the Performance Criteria represent different levels of detail. The number of Performance Criteria in a Unit or Element is not proportional to the amount of time or effort that a project manager must spend in that area to be viewed as competent.

The material in this document can also be used to support learning and development when applied by qualified educators and trainers. In order to provide such support, the framework would need to be expanded to address questions such as:

- What skills and knowledge are needed to demonstrate this standard of performance?

- What are the parameters for collecting evidence and assessing performance?

Appendix C, *Mapping of 48 Concepts/Topics* and Appendix D, *Assessment Guidelines*, provide relevant information that should be useful to address learning and development needs.

3.   Role Descriptions for Project Managers

The term *project* has been defined in many different ways. For example:

- "A time and cost restrained operation to realize a set of defined deliverables (the scope to fulfill the project's objectives) up to quality standards and requirements." (International Project Management Association)

- "A temporary endeavor undertaken to create a unique product or service." (Project Management Institute, Inc., USA)

Despite the differences in phrasing, these definitions, like most other definitions of project, are conceptually equivalent. Whatever the words used, however, it is clear that a project can be small or large, short or long. A project could be:

- The development of a new power plant from feasibility and design through construction and commissioning

- The preparation of the feasibility study alone
- The construction activities alone
- The creation of a research report for a consumer products company
- The implementation of a new information technology system

In some organizations, project manager is a position with that title, while in others, it is a temporary assignment. Whether a position or an assignment, whenever a single individual is clearly responsible for the management of a project, that individual can be considered to be a *project manager* for the purposes of this framework.

In the context of the GAPPS framework, being responsible for the *management* of the project includes being responsible for the relevant aspects of *leadership* as well. For example, project managers may need to align, motivate, and inspire project team members in addition to doing the more routine activities such as planning and reporting.

3.1 Differentiating Project Manager Roles

Project managers are expected to produce essentially the same results — outputs and outcomes that are acceptable to relevant stakeholders. However, the context in which these results are produced may differ: some projects are inherently harder to manage than others. A project manager who is competent to manage an easier, less complex project may not be competent to manage a harder, more complex project.

GAPPS has developed an approach to categorizing projects based on their management complexity. The GAPPS framework uses a tool called the Crawford-Ishikura Factor Table for Evaluating Roles, or CIFTER. The tool, named after two major contributors to GAPPS, is used to differentiate project manager roles based on the complexity of the projects managed.

The CIFTER factors identify the causes of project management complexity. For example, in some application areas, a project manager's ability to control project costs is considered to be the primary factor in determining competence. The CIFTER provides a mechanism for matching competence to need by identifying the factors that affect the project manager's ability to control costs.

The CIFTER identifies seven factors that affect the management complexity of a project. Each factor is rated from 1 to 4 using a qualitative point scale, and the factors are totaled to produce a management complexity rating for the project. The use of the CIFTER is described in more detail in the remainder of this section.

3.2 The CIFTER Factors

There are seven CIFTER factors which together define a project's management complexity. Each of the seven factors is given equal weight when evaluating the management complexity of a project. Since the characteristics of a project may change over time, the CIFTER factors may change over time as well.

1. *Stability of the overall project context.* The project context includes the project life-cycle, the stakeholders, the degree to which the applicable methods and approaches are known, and the wider socioeconomic environment. When the project context is unstable — phase deliverables are poorly defined, scope changes are frequent and significant, team members are coming and going, applicable laws and regulations are being modified — the project management challenge increases.

Note: some aspects of "technical complexity" such as dealing with unproven concepts would be considered here. Uncertainty in the economic or political environment would be considered here.

2. *Number of distinct disciplines, methods, or approaches involved in performing the project.* Most projects involve more than one management or technical discipline; some projects involve a large number of different disciplines. For example, a project to develop a new drug could include medical researchers, marketing staff, manufacturing experts, lawyers, and others. Since each discipline tends to approach its part of the project in a different way, more disciplines means a project that is relatively more difficult to manage.

   Note: some aspects of "technical complexity" such as dealing with a product with many interacting elements would be considered here.

3. *Magnitude of legal, social, or environmental implications from performing the project.* This factor addresses the potential *external* impact of the project. For example, the potential for catastrophic failure means that the implications of constructing a nuclear power plant close to a major urban centre will likely be much greater than those of constructing an identical plant in a remote area. The management complexity of the urban project will be higher due to the need to deal with a larger number of stakeholders and a more diverse stakeholder population.

   Note: "external impact" refers to the effect on individuals and organizations outside the performing organization. Financial considerations related to actual or potential legal liability for the performing organization would be considered in factor 4.

4. *Overall expected financial impact (positive or negative) on the project's stakeholders.* This factor accounts for one aspect of the traditional measure of "size," but does so in relative terms. For example, a project manager in a consumer electronics start-up is subject to more scrutiny than a project manager doing a similarly sized project for a computer manufacturer with operations around the globe, and increased scrutiny generally means more management complexity. A subproject whose output is a *necessary* component of the parent project would generally receive a rating on this factor close to or equal to that of the parent project.

   Note: where the impact on different stakeholders is different, this factor should be rated according to the impact on the primary stakeholders. Financial considerations related to actual or potential legal liability incurred by the performing organization would be considered here.

5. *Strategic importance of the project to the organization or organizations involved.* This factor addresses yet another aspect of "size," and again deals with it in relative rather than absolute terms. While every project should be aligned with the organization's strategic direction, not every project can be of equal importance to the organization or organizations involved. A subproject whose output is a *necessary* component of the parent project would generally receive a rating on this factor close to or equal to that of the parent project.

   Note: as with financial impact, if the strategic importance for different stakeholders is different, this factor should be rated according to the strategic importance for the primary stakeholders.

6. *Stakeholder cohesion regarding the characteristics of the product of the project.* When all or most stakeholders are in agreement about the characteristics of the product of the project, they tend to be in agreement about the expected outcomes as well. When they are not in agreement, or when the benefits of a product with a particular set of characteristics are unknown or uncertain, the project management challenge is increased.

7. *Number and variety of interfaces between the project and other organizational entities.* In the same way that a large number of different disciplines on a project can create a management challenge, a large number of different organizations can as well.

Note: issues of culture and language would be addressed here. A large team could have a relatively small number of interfaces if most team member have the same employer. On the other hand, shift work might increase the rating here even though the additional shifts are technically part of the project.

3.3   The CIFTER Ratings

Each of the seven factors in the CIFTER has been rated on a point scale of 1 -4 with the total number of points across the seven factors determining whether a project is Global 1, Global 2 or neither.

The point ratings for the CIFTER were established in an iterative fashion. An initial set of factors and values were identified, and several projects rated. While the CIFTER development team recognized that most projects could benefit from a higher level of skill, each iteration was assessed as follows:

- Was a project that rated *below* Level 1 *unlikely* to require the skills of a competent Global Level 1 project manager?
- Was a project that rated *at* Level 1 *likely* to require the skills of a competent Global Level 1 project manager?
- Was a project that rated *at* Level 2 *likely* to require the skills of a competent Global Level 2 project manager?

Both factors and ratings were adjusted until the results met the criteria above. With the final set of seven factors and a point scale of 1 to 4, the following ranges were set:
- 11 points or less: this project *cannot* be used to provide evidence for a GAPPS compliant performance assessment.
- 12 points or more: this project *can* be used to provide evidence for a GAPPS compliant performance assessment at Global Level 1.
- 19 points or more: this project *can* be used to provide evidence for a GAPPS compliant performance assessment at Global Level 2.

The project being rated should be defined in terms of the responsibilities of the project manager. For example, on a construction project:

- The owner's project manager may have an unstable project context while the contractor's project manager has a stable one.
- The financial impact on the owner's organization could be slight while the impact on the contractor's organization could be huge.

Crawford-Ishikura Factor Table for Evaluating Roles (CIFTER)

Project Management Complexity Factor	Descriptor and Points			
1. Stability of the overall project context	Very high (1)	High (2)	Moderate (3)	Low or very low (4)
2. Number of distinct disciplines, methods, or approaches involved in performing the project	Low or very low (1)	Moderate (2)	High (3)	Very high (4)
3. Magnitude of legal, social, or environmental implications from performing the project	Low or very low (1)	Moderate (2)	High (3)	Very high (4)
4. Overall expected financial impact (positive or negative) on the project's stakeholders	Low or very low (1)	Moderate (2)	High (3)	Very high (4)
5. Strategic importance of the project to the organization or organizations involved	Very low (1)	Low (2)	Moderate (3)	High or very high (4)
6. Stakeholder cohesion regarding the characteristics of the product of the project	High or very high (1)	Moderate (2)	Low (3)	Very low (4)
7. Number and variety of interfaces between the project and other organizational entities	Very low (1)	Low (2)	Moderate (3)	High or very high (4)

In order to illustrate the use of the CIFTER, nine sample projects from three different application areas were selected and rated:

A. Social/public services project: develop a three-hour employee orientation program for a municipal department.

B. Social/public services project: develop and implement an in-house training program on a new, computerized point-of-sale system for the automobile driver licensing unit of a state or province.

C. Social/public services project: develop and implement a new science curriculum for the final, pre-university year in all schools in a state or province.

D. Information Technology project: implement a software package upgrade in a single business functional area.

E. Information Technology project: design a new corporate website for a multi-national manufacturing company.

F. Information Technology project: implement an Enterprise Resource Planning application across business areas in an environment where the success or failure of the implementation has significant legal implications.

G. Engineering and Construction project: construction management for a small addition to a local school done mostly during summer vacation.

H. Engineering and Construction project: construction management of the renovation of a small, suburban office building.

I. Engineering and Construction project: construction management of the renovation of a 30 storey hotel for an international hotel chain.

As illustrated in the table below, Projects A, D, and G could not be used to provide evidence of competency in a GAPPS compliant assessment. Projects B, C, E, F, H, and I could all be used to provide evidence for a Global Level 1 assessment. Projects C, F, and I could all be used to provide evidence for a Global Level 2 assessment. Appendix E contains more detail about the CIFTER sample ratings.

Sample Project	Project Management Complexity Factor							Total Score
	1. Stability	2. No. of Methods	3. Implications	4. Financial Impact	5. Strategic Importance	6. Stakeholder Cohesion	7. Project Interfaces	
A	1	1	1	1	1	1	1	7
B	2	2	2	2	3	2	2	15
C	3	2	3	2	4	3	3	20
D	1	1	1	1	1	1	1	7
E	2	2	1	2	2	2	2	13
F	4	2	4	3	3	3	3	22
G	1	1	1	2	2	1	1	9
H	2	1	2	2	2	2	2	13
I	3	3	2	2	3	4	3	20

3.4 Limitations of the CIFTER

The CIFTER does not accommodate individuals managing multiple projects since ratings for multiple projects cannot be summed. However, an assessment process could allow evidence from more than one project as long as each individual project meets the requirements for the level being assessed.

In some application areas, multiple project managers may share overall responsibility for the project. These projects cannot be used for assessment since it would not be clear which project manager was responsible for which results.

Ratings on individual factors will often vary for the same project. For example, one person might consider the stability of the overall project context to be "high" while another views it as "moderate." However, experience has shown that such differences balance out and that the project totals are quite consistent.

3.5 The CIFTER and Career Development

Although the primary purpose of the CIFTER is to differentiate levels of management complexity in order to define project manager roles for assessment, it can also be used to guide career development. For example, a Global Level 1 project manager might seek opportunities to manage projects with higher scores on certain factors in order to move toward Global Level 2 assessment.

4.   Application

The GAPPS framework explicitly recognizes that there are many different approaches to the management of projects, that there are many different ways to achieve satisfactory results, that there are many different techniques for assessing competence, and that there are many different paths for project managers to follow to develop their competence.

4.1   Use in Assessment

This section provides an overview of the use of the GAPPS framework in assessment. Appendix D provides more detail.

When used for assessment, the GAPPS framework is intended to help an assessor infer whether an experienced, practicing project manager is *likely* to be able to perform competently on future projects. The assessment should include direct contact between the candidate and the assessor as well as examination of evidence supplied by the candidate and by other sources such as clients, supervisors, and team members. Assessment may also include direct observation of the candidate in a workplace environment.

The assessor and the candidate must agree that the projects to be used as evidence meet the criteria for the level being assessed as defined by the CIFTER. Additional evidence criteria such as currency and authenticity are described in Appendix D.

As with most other performance based competency standards, GAPPS assumes that 100% of the Performance Criteria must be satisfied for a candidate to be assessed as competent in the role. As a result, Performance Criteria have generally not been repeated in different Units. For example, since stakeholder communications are monitored in PM01, there is no reference to monitoring them in PM03. This interdependent nature of the Performance Criteria requires that assessment be done using a holistic approach.
A candidate that does not meet all of the performance criteria should be assessed as "not yet competent." To the extent possible, the assessment process should provide input to both successful and unsuccessful candidates about opportunities for improvement and professional growth.

The Units, Elements, and Performance Criteria are not linear or sequential: there is no requirement that the work be done in any particular sequence or that the Performance Criteria be satisfied in any particular order. In addition, some Performance Criteria can be satisfied with relatively little effort while others will require a substantial commitment from the project manager over the full length of the project.

4.2   Relationship to Existing Standards

This document is intended to complement existing competency standards, not to replace them. For example:
• Organizations that have performance based competency standards (e.g., the Services Sector Education and Training Authority in South Africa) may map their existing standards to the GAPPS framework in order to facilitate comparisons with other systems.

- Organizations that use attribute based competency assessments (e.g., IPMA, the International Project Management Association) may choose to supplement their assessments with performance based criteria.

In similar fashion, this document is not intended to replace knowledge guides such as the *APM Body of Knowledge* (UK Association of Project Management), *A Guide to the Project Management Body of Knowledge* (USA Project Management Institute, Inc.), *Project and Program Management (P2M)* (Japan, Project Management Association of Japan), and others. Knowledge guides, as well as the numerous books about project management, serve to develop the underpinning knowledge and understanding that helps project managers learn how to produce the results from which competence is inferred.

4.3   Adoption as a Standard

GAPPS encourages other organizations to adopt this framework as their own. For example:
- Professional associations that do not currently have assessment standards can use it to expedite their ability to serve their members.
- Standards and qualifications bodies can use it to facilitate transferability and mutual recognition of qualifications.
- Public and private organizations can use it to facilitate staff development programs and to help ensure better project results.

Any entity that adopts the GAPPS framework should use all of the Units, Elements, and Performance Criteria in order to help ensure consistency of application and reciprocity. Additions and modifications can be made as appropriate (and in accordance with the GAPPS "copyleft" license) to suit local and regulatory requirements. For example:
- A professional association may wish to include a specific knowledge guide as the basis for developing knowledge and understanding.
- A standards or qualification body may need to modify the structure or terminology to conform to its own conventions or to local culture.
- A private sector organization may decide to add Elements or Performance Criteria, or to provide further detail in the Range Statements, in order to reflect aspects of performance specific to that organization or its project management methodology.
- Any of the above entities may translate these materials to make them more accessible.

Any entity that adopts the GAPPS framework may apply it to one or both levels. However, the use of the CIFTER to assess the level at which the project manager is operating is an integral part of the framework.

5.   Terms and Definitions

Key terms and definitions are included in the Range Statements in the Units of Competency (section 6). Terms are defined the first time they occur within each Unit of Competency and are displayed in **bold type** in subsequent uses.

Appendix A contains a complete list of all of the Range Statements.

6.   Units of Competency

The table below provides a summary of the Units of Competency while the table on the following page provides an overview of the Units, Elements, and Performance Criteria. Details for all, plus the Range Statements, are provided on the following pages.

Units 1-5 are applicable to Global Level 1 project managers while Units 1-6 are applicable to Global Level 2 project managers. Although the Performance Criteria are the same for both levels, the context in which that performance must be demonstrated is different as defined by the level of the project using the CIFTER.

Unit No.	Unit Title	Unit Descriptor
PM01	Manage Stakeholder Relationships	This Unit defines the Elements required to manage stakeholder relationships during a project. It includes the Performance Criteria required to demonstrate competence in ensuring the timely and appropriate involvement of key individuals, organizations, and groups throughout the project.
PM02	Manage Development of the Plan for the Project	This Unit defines the Elements required to manage development of the plan for the project. It includes the Performance Criteria required to demonstrate competence in determining how to realize the project in an efficient and effective manner.
PM03	Manage Project Progress	This Unit defines the Elements required to manage project progress. It includes the Performance Criteria required to demonstrate competence in ensuring that the project is moving constructively toward delivery of the product of the project and in support of the agreed project outcomes.
PM04	Manage Product Acceptance	This Unit defines the Elements required to ensure that the product, service, or result of the project will be accepted by relevant stakeholders. It includes the Performance Criteria required to demonstrate competence in ensuring that the product of the project is defined, agreed, communicated, and accepted.
PM05	Manage Project Transitions	This Unit defines the Elements required to manage project transitions. It includes the Performance Criteria required to demonstrate competence in getting the project underway, in moving from one project phase to the next, and in closing the project down at its conclusion.
PM06	Evaluate and Improve Project Performance	This Unit defines the Elements required to evaluate and improve project performance. It includes the Performance Criteria required to demonstrate competence in ensuring that opportunities for improvement are applied on this project and made available for future projects.

Summary of Units, Elements, and Performance Criteria

Units	Elements	Performance Criteria
Manage Stakeholder Relationships	1.1 Ensure that stakeholder interests are identified and addressed.	1.1.1 Relevant stakeholders are determined. 1.1.2 Stakeholder interests are investigated and documented. 1.1.3 Stakeholder interests are considered when making project decisions. 1.1.4 Actions to address differing interests are implemented.
	1.2 Promote effective individual and team performance.	1.2.1 Interpersonal skills are applied to encourage individuals and teams to perform effectively. 1.2.2 Individual project roles are defined, documented, communicated, assigned, and agreed to. 1.2.3 Individual and team behavioral expectations are established. 1.2.4 Individual and team performance is monitored and feedback provided. 1.2.5 Individual development needs and opportunities are recognized and addressed.
	1.3 Manage stakeholder communications.	1.3.1 Communication needs of stakeholders are identified and documented. 1.3.2 Communication method, content, and timing is agreed to by relevant stakeholders. 1.3.3 Information is communicated as planned, and variances are identified and addressed.
	1.4 Facilitate external stakeholder participation.	1.4.1 External stakeholder participation is planned, documented, and communicated. 1.4.2 External stakeholder participation is supported as planned, and variances are addressed.
Manage Development of the Plan for the Project	2.1 Define the work of the project.	2.1.1 A shared understanding of desired project outcomes is agreed to with relevant stakeholders. 2.1.2 Processes and procedures to support the management of the project are identified, documented, and communicated to relevant stakeholders. 2.1.3 Work-items required to accomplish the product of the project are determined. 2.1.4 The work-items and completion criteria are agreed to by relevant stakeholders. 2.1.5 Assumptions, constraints, and exclusions are identified and documented. 2.1.6 Relevant knowledge gained from prior projects is incorporated into the plan for the project where feasible.
	2.2 Ensure the plan for the project reflects relevant legal requirements.	2.2.1 Relevant legal requirements are identified, documented, and communicated to relevant stakeholders. 2.2.2 Potential for conflicts caused by legal requirements are identified and addressed in the plan for the project.
	2.3 Document risks and risk responses for the project.	2.3.1 Risks are identified in consultation with relevant stakeholders. 2.3.2 Risk analysis techniques are used to evaluate risks and then prioritize them for further analysis and response planning. 2.3.3 Responses to risks are identified and agreed to by relevant stakeholders.
	2.4 Confirm project success criteria.	2.4.1 Measurable project success criteria are identified and documented. 2.4.2 Project success criteria are agreed to by relevant stakeholders.
	2.5 Develop and integrate project baselines.	2.5.1 Resource requirements are determined. 2.5.2 Schedule is developed based on resource requirements, resource availability, and required sequence of work-items. 2.5.3 Budget is developed based on resource requirements. 2.5.4 Conflicts and inconsistencies in the plan for the project are addressed. 2.5.5 The plan for the project is approved by authorized stakeholders and communicated to relevant stakeholders.
Manage Project Progress	3.1 Monitor, evaluate, and control project performance.	3.1.1 Performance of the project is measured, recorded, evaluated, and reported against the project baselines. 3.1.2 Processes and procedures are monitored and variances addressed. 3.1.3 Completed work-items are reviewed to ensure that agreed completion criteria were met. 3.1.4 Corrective action is taken as needed in support of meeting project success criteria.
	3.2 Monitor risks to the project.	3.2.1 Identified risks are monitored. 3.2.2 Changes to the external environment are observed for impact to the project. 3.2.3 Applicable legal requirements are monitored for breaches and conflicts. 3.2.4 Actions are taken as needed.
	3.3 Reflect on practice.	3.3.1 Feedback on personal performance is sought from relevant stakeholders and addressed. 3.3.2 Lessons learned are identified and documented.

(continued next page)

Summary of Units, Elements, and Performance Criteria
(continued from prior page)

Units	Elements	Performance Criteria
Manage Product Acceptance	4.1 Ensure that the product of the project is defined.	4.1.1 Desired characteristics of the product of the project are identified in consultation with relevant stakeholders. 4.1.2 Characteristics of the product of the project are documented and agreed to by relevant stakeholders.
	4.2 Ensure that changes to the product of the project are monitored and controlled.	4.2.1 Variances from agreed product characteristics are identified and addressed. 4.2.2 Requests for changes to the product of the project are documented, evaluated, and addressed in accordance with the change control processes for the project. 4.2.3 Approved product changes are implemented.
	4.3 Secure acceptance of the product of the project.	4.3.1 The product of the project is evaluated against the latest agreed characteristics and variances addressed where necessary. 4.3.2 The product of the project is transferred to identified stakeholders and accepted.
Manage Project Transitions	5.1 Manage project start-up.	5.1.1 Authorization to expend resources is obtained from the appropriate stakeholders. 5.1.2 Start-up activities are planned and conducted.
	5.2 Manage transition between project phases.	5.2.1 Acceptance of the outputs of a prior phase is obtained from the relevant stakeholders. 5.2.2 Authorization to begin work on a subsequent phase is obtained from the appropriate stakeholders. 5.2.3 Transition activities are planned and conducted.
	5.3 Manage project closure.	5.3.1 Closure activities are planned and conducted. 5.3.2 Project records are finalized, signed off, and stored in compliance with processes and procedures.
Evaluate and Improve Project Performance	6.1 Develop a plan for project evaluation.	6.1.1 Purpose, focus, and criteria of evaluation are determined. 6.1.2 Relevant evaluation techniques are determined.
	6.2 Evaluate the project in accordance with plan.	6.2.1 Performance data is collected and analyzed in accordance with the evaluation plan. 6.2.2 Evaluation process engages relevant stakeholders.
	6.3 Capture and apply learning.	6.3.1 Knowledge sharing and skill transfer is encouraged among relevant stakeholders. 6.3.2 Results of evaluations are documented and made available for organizational learning. 6.3.3 Potential improvements are identified, documented and communicated to relevant stakeholders. 6.3.4 Improvements agreed for this project are applied.

PM01   Manage Stakeholder Relationships

Unit Descriptor	This Unit defines the Elements required to manage stakeholder relationships during a project. It includes the Performance Criteria required to demonstrate competence in ensuring the timely and appropriate involvement of key individuals, organizations, and groups throughout the project.

Application is for the Global Level 1 Role and the Global Level 2 Role as described in Section 3.

PM01   Elements

1.1   Ensure that stakeholder interests are identified and addressed.
1.2   Promote effective individual and team performance.
1.3   Manage stakeholder communications.
1.4   Facilitate external stakeholder participation.

PM01   Element 1

1.1   **Ensure** that **stakeholder interests** are identified and **addressed**.

Performance Criteria	Range Statements
1.1.1 **Relevant stakeholders** are determined.	a. **Ensuring** may include performing, supervising, or directing.
1.1.2 **Stakeholder interests** are investigated and documented.	b. **Stakeholders** include those whose interests are affected by the project. This may include team members, clients, sponsors, internal and external parties, decision makers, and others.
1.1.3 **Stakeholder interests** are **considered** when making project decisions.	c. **Interests** may include needs, wants, expectations, or requirements. Interests may be stated or implied. Interests may be related to the product of the project or to how the activities of the project are conducted.
1.1.4 **Actions** to **address** differing interests are implemented.	d. **Addressed** includes acceptance as is, acceptance with modification, or rejection. Interests may be addressed without being satisfied.
	e. The **relevance** of a stakeholder may be affected by the impact of the project on the stakeholder, by the impact of the stakeholder on the project, and by cultural or ethical considerations. Different stakeholders are relevant in different situations.
	f. **Consideration** of interests should be done in an ethical manner.
	g. **Actions** may include problem solving, negotiating, accommodating, compromising, collaborating, or cooperating.

PM01	Element 2

1.2 Promote effective individual and team performance.

Performance Criteria	Range Statements
1.2.1 **Interpersonal skills** are applied to encourage individuals and teams to perform effectively. 1.2.2 Individual project **roles** are defined, documented, communicated, assigned, and agreed to. 1.2.3 Individual and team **behavioral expectations** are established. 1.2.4 Individual and team performance is **monitored** and **feedback** provided. 1.2.5 **Individual development needs** and **opportunities** are recognized and **addressed**.	a. **Interpersonal skills** may include leadership skills, verbal and non-verbal communication skills, decision making, dealing with emotions and stress, conflict management, trust building, negotiating, demonstrating sensitivity to diversity issues, and modeling desired behavior. The application of interpersonal skills may be influenced by the phase of the project life-cycle. b. **Roles** may encompass responsibilities, accountabilities, authorities, reporting arrangements, and other required aspects of work performance. c. **Behavioral expectations** may include responding to conflict; dealing with differences in skill, background, culture, or other personal characteristics of individuals involved with the project; and may be influenced by the phase of the project life-cycle. d. **Monitoring** in the project context will generally require paying special attention to potential causes or sources of interpersonal conflict. e. **Feedback** may be positive or negative and may include follow up activities. f. **Individual development** involves enhancing individual skills. **Needs** are for skills directly related to the work of the project. **Opportunities** are for skills that benefit the individual or the organization. Development may be provided in formal or informal contexts. g. Needs and opportunities may be **addressed** without being satisfied.

PM01	Element 3

1.3   Manage **stakeholder** communications.

Performance Criteria	Range Statements
1.3.1 **Communication needs** of **stakeholders** are identified and documented. 1.3.2 Communication method, content, and timing is agreed to by **relevant stakeholders**. 1.3.3 Information is communicated as planned, and **variances** are identified and **addressed**.	a. **Communication needs** may include content required, method used (e.g., electronic, phone, meeting), geographical dispersion, protocols, cultural differences, and confidentiality requirements. They may be documented formally or informally and may be included in other project documentation. b. **Variances** may include missing reports, incorrect or misleading content, and late distribution. Communications that fail to satisfy the stakeholders' needs may also be considered variances. Minor variances may not require corrective action.

PM01	Element 4

1.4   Facilitate **external stakeholder participation**.

Performance Criteria	Range Statements
1.4.1 **External stakeholder participation** is planned, documented, and communicated. 1.4.2 **External stakeholder participation** is supported as planned, and **variances** are **addressed**.	a. **External** stakeholders are those outside the project team. They may be internal to or external to the project manager's organization. The boundary between the external stakeholders and the project team is often indistinct. b. **Participation** may include correspondence, attendance at meetings, or review of documentation. c. **Variances** may include non-participation, unsolicited or unplanned participation, changes in personnel, and other unexpected occurrences. Minor variances may not require corrective action.

PM02	Manage Development of the Plan for the Project

Unit Descriptor	This Unit defines the Elements required to manage development of the plan for the project. It includes the Performance Criteria required to demonstrate competence in determining how to realize the project in an efficient and effective manner.

Note: The plan for the project may be known by other names specific to the organization or the application area and will generally include additional supporting detail not described here.

Application is for the Global Level 1 Role and the Global Level 2 Role as described in Section 3.

PM02	Elements

2.1 Define the work of the project.
2.2 Ensure the plan for the project reflects relevant legal requirements.
2.3 Document risks and risk responses for the project.
2.4 Confirm project success criteria.
2.5 Develop and integrate project baselines.

PM02	Element 1

2.1 Define the work of the project.

Performance Criteria	Range Statements
2.1.1 A shared understanding of desired project **outcomes** is agreed to with **relevant stakeholders**. 2.1.2 **Processes and procedures** to support the management of the project are identified, documented, and communicated to relevant stakeholders. (continued next page)	a. **Outcomes** are the result of the delivery of the project outputs and may occur after the project is complete. b. **Stakeholders** include those whose interests are affected by the project. This may include team members, clients, sponsors, internal and external parties, decision makers, and others. c. The **relevance** of a stakeholder may be affected by the impact of the project on the stakeholder, by the impact of the stakeholder on the project, and by cultural or ethical considerations. Different stakeholders are relevant in different situations. d. **Processes and procedures** may exist within the organization or may need to be developed. They may be manual or automated and will normally include at least change control and status reporting. They may also include management plans, work authorization, project governance, and product acceptance.

PM02　Element 1 (continued)

2.1　Define the work of the project. (continued)

Performance Criteria	Range Statements
2.1.3 **Work-items** required to accomplish the **product of the project** are determined. 2.1.4 The **work-items** and **completion criteria** are agreed to by relevant stakeholders. 2.1.5 Assumptions, constraints, and **exclusions** are identified and documented. 2.1.6 Relevant **knowledge** gained from prior projects is incorporated into the plan for the project where feasible.	e. A **work-item** is a segment of the overall work of the project. Work-items may be called work packages, deliverables, outputs, cost accounts, activities, or tasks. They may be represented in an ordered or unordered list, or graphically through a Work Breakdown Structure (WBS) or similar display. f. **Product of the project** may be a physical item, a service, or other solution and is the primary output of the project at project completion. It may be a component of a larger project. For example preparing a feasibility study or developing a functional specification may be treated as an independent project. g. **Completion criteria** may be identified in the plan for the project or may be contained in descriptions of the product of the project such as specifications; user requirements; quality requirements; health, safety, environment, and community requirements; or other application area specific documents. h. **Exclusions** are potential work-items, or the results of work-items, that might reasonably be expected by a stakeholder but which will not be included in the work of this project. i. **Knowledge** includes information gained and lessons learned from other projects.

PM02　Element 2

2.2　**Ensure** the plan for the project reflects relevant **legal requirements**.

Performance Criteria	Range Statements
2.2.1 Relevant **legal requirements** are identified, documented, and communicated to **relevant stakeholders**. 2.2.2 Potential for conflicts caused by **legal requirements** are identified and **addressed** in the plan for the project.	a. **Ensuring** may include performing, supervising, or directing. b. **Legal requirements** may include legislation and regulations; authority approvals; contract and sub-contract provisions; operational health and safety; discrimination; industrial relations; fair trade; internal business controls; and environmental issues. Contractual provisions may need to be addressed from both the buyer's and the seller's perspectives. c. **Addressed** includes acceptance as is, acceptance with modification, or rejection. Conflicts may be addressed without being eliminated.

PM02	Element 3

2.3 Document **risks** and **risk responses** for the project.

Performance Criteria	Range Statements
2.3.1 **Risks** are identified in consultation with **relevant stakeholders**. 2.3.2 **Risk analysis techniques** are used to evaluate **risks** and then **prioritize** them for further analysis and **response** planning. 2.3.3 **Responses** to **risks** are identified and agreed to by **relevant stakeholders**.	a. A **risk** is an uncertain event or condition that if it occurs, has a positive or negative effect on the project. Risks may include generic items such as employee turnover or application area specific items such as health, safety, and environmental issues on a construction project. b. **Responses** may include mitigation, acceptance (no action), transfer, assignment, and contingency planning. c. **Risk analysis techniques** may be qualitative or quantitative and should be chosen based on the management complexity of the project. d. **Prioritization** may be based on probability of occurrence, impact on the project, impact on the business, frequency of occurrence, or other factors.

PM02	Element 4

2.4 Confirm **project success criteria**.

Performance Criteria	Range Statements
2.4.1 Measurable **project success criteria** are identified and documented. 2.4.2 **Project success criteria** are agreed to by **relevant stakeholders**.	a. **Project success criteria** are measures that describe how the project will be evaluated. They may be quantitative or qualitative. They may have been defined previously or developed by the project. They may address both the product of the project and the management of the project.

PM02	Element 5

2.5   Develop and integrate project **baselines**.

Performance Criteria	Range Statements
2.5.1 **Resource requirements** are determined. 2.5.2 **Schedule** is developed based on resource requirements, resource availability, and required **sequence** of work-items. 2.5.3 **Budget** is developed based on resource requirements. 2.5.4 Conflicts and inconsistencies in the plan for the project are **addressed**. 2.5.5 The plan for the project is **approved** by authorized stakeholders and communicated to **relevant stakeholders**.	a. **Baselines** are the agreed to reference points for measuring performance and progress of the project. Baselines must include a budget and a schedule and may also include scope, work, resources, revenue, cash flow, communication, quality, risk, or other aspects of the project. b. **Resources** may include people, funding, information, time, facilities, supplies and equipment. c. **Resource requirements** may include type, quantity, and timing. They may be determined for the overall project or for individual work-items. d. **Schedule** may be developed using durations (work periods) or elapsed time (calendar periods). Schedule detail may vary based on the needs of the project. e. **Sequence** is the logical and practical ordering of work-items. f. **Budgets** may be expressed in monetary or other units. Budget detail may vary based on the needs of the project, funds availability, and accounting rules. g. **Approval** is provided with the expectation that the plan for the project will be updated as the project progresses (PM03 covers managing project progress).

PM03	Manage Project Progress
Unit Descriptor	This Unit defines the Elements required to manage project progress. It includes the Performance Criteria required to demonstrate competence in ensuring that the project is moving constructively toward delivery of the product of the project and in support of the agreed project outcomes.
Application is for the Global Level 1 Role and the Global Level 2 Role as described in Section 3.	

PM03	Elements

3.1   Monitor, evaluate, and control project performance.
3.2   Monitor risks to the project.
3.3   Reflect on practice.

PM03　　Element 1

3.1　Monitor, evaluate, and control project performance.

Performance Criteria	Range Statements
3.1.1　Performance of the project is **measured**, recorded, **evaluated**, and reported against the project **baselines**. 3.1.2　**Processes and procedures** are monitored and **variances addressed**. (continued next page)	a.　**Measurement** may include feedback obtained from stakeholders, variances from plan, changes in stakeholder interests, and changes in assumptions and constraints. b.　**Evaluation** may rely on information gained from trend analysis, forecasting, strategic alignment reviews, and reading the internal and external environments. c.　**Baselines** are the agreed to reference points for measuring performance and progress of the project. Baselines must include a budget and a schedule and may also include scope, work, resources, revenue, cash flow, communication, quality, risk, or other aspects of the project. d.　**Processes and procedures** may exist within the organization or may need to be developed. They may be manual or automated and will normally include at least change control and status reporting. They may also include management plans, work authorization, project governance, and product acceptance. e.　**Variances** may include errors in design or use. Minor variances may not require corrective action. f.　**Addressed** includes acceptance as is, acceptance with modification, or rejection.

PM03 Element 1 (continued)

3.1 Monitor, evaluate, and control project performance. (continued)

Performance Criteria	Range Statements
3.1.3 Completed **work-item**s are reviewed to ensure that agreed **completion criteria** were met. 3.1.4 **Corrective action** is taken as needed in support of meeting **project success criteria**.	g. A **work-item** is a segment of the overall work of the project. Work-items may be called work packages, deliverables, outputs, cost accounts, activities, or tasks. They may be represented in an ordered or unordered list, or graphically through a Work Breakdown Structure (WBS) or similar display. h. **Completion criteria** may be identified in the plan for the project or may be contained in descriptions of the product of the project such as specifications; user requirements; quality requirements; health, safety, environment, and community requirements; or other application area specific documents. i. **Corrective action** may include steps taken to prevent future problems, problem solving, communication, conflict resolution, decision making, preparation of change requests, and implementing risk responses. Where the project manager's authority is limited, corrective action may also include requests for action directed to the responsible parties. j. **Project success criteria** are measures that describe how the project will be evaluated. They may be quantitative or qualitative. They may have been defined previously or developed as part of the project. They may address both the product of the project and the management of the project.

PM03　Element 2

3.2　Monitor **risks** to the project.

Performance Criteria	Range Statements
3.2.1　Identified **risks** are monitored. 3.2.2　Changes to the **external environment** are observed for impact on the project. 3.2.3　Applicable **legal requirements** are monitored for breaches and conflicts. 3.2.4　**Actions** are taken as needed.	a.　A **risk** is an uncertain event or condition that if it occurs, has a positive or negative effect on the project. Risks may include generic items such as employee turnover or application area specific items such as health, safety, and environmental issues on a construction project. b.　The **external environment** may include the organization in which the project is conducted, inter-project dependencies, technological advances, and legal, social, economic, environmental or political changes. The significance of the external factors will vary in relation to the nature of the project. c.　**Legal requirements** may include legislation and regulations; authority approvals; contract and sub-contract provisions; operational health and safety; discrimination; industrial relations; fair trade; internal business controls; and environmental issues. Contractual provisions may need to be addressed from both the buyer's and the seller's perspectives. d.　**Actions** may include risk responses, corrective measures, and documented exemptions handled outside of the agreed change control processes.

PM03　Element 3

3.3　**Reflect** on practice.

Performance Criteria	Range Statements
3.3.1　Feedback on personal performance is sought from **relevant stakeholders** and **addressed**. 3.3.2　**Lessons learned** are identified, documented, and shared with **relevant stakeholders**.	a.　**Reflection** includes self-evaluation and consideration of the project manager's personal contributions to the project. b.　**Stakeholders** include those whose interests are affected by the project. This may include team members, clients, sponsors, internal and external parties, decision makers, and others. c.　The **relevance** of a stakeholder may be affected by the impact of the project on the stakeholder, by the impact of the stakeholder on the project, and by cultural or ethical considerations. Different stakeholders are relevant in different situations. d.　**Lessons learned** may apply to a single phase, to the entire project, or to future projects, and may include organizational issues. See also PM06 for Global Level 2.

PM04	Manage Product Acceptance

Unit Descriptor	This Unit defines the Elements required to ensure that the product, service, or result of the project will be accepted by relevant stakeholders. It includes the Performance Criteria required to demonstrate competence in ensuring that the product of the project is defined, agreed, communicated, and accepted.
	Application is for the Global Level 1 Role and the Global Level 2 Role as described in Section 3.

PM04	Elements

4.1   Ensure that the product of the project is defined.
4.2   Ensure that changes to the product of the project are monitored and controlled.
4.3   Secure acceptance of the product of the project.

PM04	Element 1

4.1   **Ensure** that the **product of the project** is defined.

Performance Criteria	Range Statements
4.1.1 **Desired characteristics** of the **product of the project** are identified in consultation with **relevant stakeholders.** 4.1.2 **Characteristics** of the **product of the project** are documented and agreed to by **relevant stakeholders.**	a. **Ensuring** may include performing, supervising, or directing. b. The **product of the project** may be a physical item, a service, or other solution and is the primary output of the project at project completion. It may be a component of a larger project. For example, preparing a feasibility study or developing a functional specification may be treated as an independent project. c. **Characteristics** may include physical dimensions, quality requirements, or other factors that may affect the use of the product of the project. d. **Desired** characteristics may include characteristics that will not be included in the completed product of the project. e. **Stakeholders** include those whose interests are affected by the project. This may include team members, clients, sponsors, internal and external parties, decision makers, and others. f. The **relevance** of a stakeholder may be affected by the impact of the project on the stakeholder, by the impact of the stakeholder on the project, and by cultural or ethical considerations. Different stakeholders are relevant in different situations.

PM04	Element 2

4.2   Ensure that changes to the **product of the project** are monitored and controlled.

Performance Criteria	Range Statements
4.2.1 **Variances** from agreed product **characteristics** are identified and **addressed.** 4.2.2 Requests for changes to the **product of the project** are documented, evaluated, and **addressed** in accordance with the **change control processes** for the project. 4.2.3 Approved product changes are implemented.	a. **Variances** are differences from the agreed product characteristics and include changes that have not been approved. Product characteristics may be specified in project documentation, quality guidelines, or other documents and may be absolutes or may have tolerances. Variances that are within tolerances may be ignored. b. **Addressed** includes acceptance as is, acceptance with modification, or rejection. Variances may be addressed without being eliminated. c. **Change control processes** are used to capture, assess, approve or reject, track, and implement changes to the product of the project. They may be developed as part of the project or may be provided by the project's parent organization.

PM04	Element 3

4.3   Secure **acceptance** of the **product of the project**.

Performance Criteria	Range Statements
4.3.1 The **product of the project** is evaluated against the latest agreed **characteristics** and variances **addressed** where necessary. 4.3.2 The **product of the project** is transferred to **identified stakeholders** and **accepted**.	a. The product of the project may be accepted with uncorrected variances. b. **Identified** stakeholders may include individuals or organizations who are involved in the use of the product of the project such as clients, customers, business owners, and technology owners.

PM05	Manage Project Transitions

Unit Descriptor	This Unit defines the Elements required to manage project transitions. It includes the Performance Criteria required to demonstrate competence in getting the project underway, in moving from one project phase to the next, and in closing the project down at its conclusion.
	Application is for the Global Level 1 Role and the Global Level 2 Role as described in Section 3.

PM05	Elements

5.1   Manage project start-up.
5.2   Manage transition between project phases.
5.3   Manage project closure.

PM05	Element 1

5.1   Manage project start-up.

Performance Criteria	Range Statements
5.1.1 Authorization to expend resources is obtained from the **appropriate stakeholders**. 5.1.2 **Start-up activities** are planned and conducted.	a. **Stakeholders** include those whose interests are affected by the project. This may include team members, clients, sponsors, internal and external parties, decision makers, and others. b. The **appropriate** stakeholder may be a client, owner, sponsor, senior executive, or other individual that is vested with the authority to make decisions regarding the project. c. **Start-up activities** may be planned separately or may be included in the plan for the project.

PM05	Element 2

5.2 Manage transition between project **phases**.

Performance Criteria	Range Statements
5.2.1 **Acceptance** of the outputs of a prior **phase** is obtained from the **relevant stakeholders**. 5.2.2 Authorization to begin work on a subsequent **phase** is obtained from the **appropriate stakeholders**. 5.2.3 **Transition activities** are planned and conducted.	a. **Phases** may also be called stages or iterations. A series of project phases may be called a project life-cycle. Some projects, especially subprojects, may have only a single phase. b. The outputs of a prior phase may be **accepted** with uncorrected variances. c. The **relevance** of a stakeholder may be affected by the impact of the project on the stakeholder, by the impact of the stakeholder on the project, and by cultural or ethical considerations. Different stakeholders are relevant in different situations. d. **Transition activities** may include stakeholder meetings, document reviews, or product and project reviews.

PM05	Element 3

5.3 Manage **project closure**.

Performance Criteria	Range Statements
5.3.1 **Closure activities** are planned and conducted. 5.3.2 Project records are finalized, signed off, and stored in compliance with **processes and procedures**.	a. **Project closure** can occur before planned completion due to unforeseen factors. Premature closure should be authorized and evaluated to determine implications. b. **Closure activities** may include acceptance testing, finalizing accounts and contracts, releasing project resources, informing stakeholders, celebrating closure, documenting and communicating knowledge, and capturing lessons learned. c. **Processes and procedures** may exist within the organization or may need to be developed.

PM06   Evaluate and Improve Project Performance

Unit Descriptor	This Unit defines the Elements required to evaluate and improve project performance. It includes the Performance Criteria required to demonstrate competence in ensuring that opportunities for improvement are applied on this project and made available for future projects.

Note: This unit differs from PM03, Manage Project Progress, in that it is concerned with *generating* improvements rather than simply monitoring and controlling them.

Application is for the Global Level 2 Role as described in Section 3.

PM06   Elements

6.1   Develop a plan for project evaluation.
6.2   Evaluate the project in accordance with plan.
6.3   Capture and apply learning.

PM06   Element 1

6.1   Develop a **plan** for project evaluation.

Performance Criteria	Range Statements
6.1.1 **Purpose**, focus, and criteria of evaluation are determined. 6.1.2 Relevant **evaluation techniques** are **determined**.	a. The **plan** for project evaluation should be integrated with the plan for the project. b. **Purpose** may include who the evaluation is for, what is being evaluated, and what use is to be made of the evaluation. The purpose may be for improvement of current or future projects; for the evaluation of project management success, product success, individual or team performance, or organizational capability; or for driving particular aspects of performance. c. **Evaluation techniques** should relate to purpose and may be formative (during the project), summative (at the close of the project), and qualitative or quantitative. d. **Determination** of evaluation techniques may consider multiple viewpoints and perspectives, cause and effect relationships, validity, sufficiency, reliability, fairness, relevance to project type and context, impact on the project, cost/benefit of the evaluation process, and the use of subject matter experts in the design or conduct of the evaluation process.

PM06   Element 2

6.2   Evaluate the project in accordance with plan.

Performance Criteria	Range Statements
6.2.1 **Performance data** is collected and analyzed in accordance with the evaluation plan. 6.2.2 Evaluation process engages **relevant stakeholders**.	a. **Performance data** may include measures collected and analyzed during the project and lessons learned captured during the project. b. **Stakeholders** include those whose interests are affected by the project. This may include team members, clients, sponsors, internal and external parties, decision makers, and others. c. The **relevance** of a stakeholder may be affected by the impact of the project on the stakeholder, by the impact of the stakeholder on the project, and by cultural or ethical considerations. Different stakeholders are relevant in different situations.

PM06   Element 3

6.3   Capture and apply learning.

Performance Criteria	Range Statements
6.3.1 Knowledge sharing and skill transfer is encouraged among **relevant stakeholders**. 6.3.2 Results of evaluations are documented and made available for organizational learning. 6.3.3 Potential improvements are identified, documented and communicated to **relevant stakeholders**. 6.3.4 **Improvements** agreed for the project are applied.	a. **Improvements** may include changes to project management processes and procedures as well as to the product of the project.

Appendices

Appendix A
Range Statements

(informative)

This appendix includes all of the Range Statements from the Units of Competency. It does not include other project management terms, nor does it include performance based competency terms. Where the Range Statements contain lists, the lists are generally illustrative and not exhaustive.

Accepted. The product of the project or the outputs of a prior phase may be accepted with uncorrected variances.

Actions in the context of managing stakeholder relationships may include problem solving, negotiating, accommodating, compromising, collaborating, or cooperating. **Actions** in the context of managing project progress may include risk responses, corrective measures, and documented exemptions handled outside of the agreed change control processes.

Addressed includes acceptance as is, acceptance with modification, or rejection. Interests, needs, and opportunities may be addressed without being satisfied. Conflicts and variances may be addressed without being eliminated.

Appropriate stakeholders. See *stakeholders*.

Approval is provided with the expectation that the plan for the project will be updated as the project progresses.

Baselines are the agreed to reference points for measuring performance and progress of the project. Baselines must include a budget and a schedule and may also include scope, work, resources, revenue, cash flow, communication, quality, risk, or other aspects of the project.

Behavioral expectations may include responding to conflict; dealing with differences in skill, background, culture, or other personal characteristics of individuals involved with the project; and may be influenced by the phase of the project life-cycle.

Budgets may be expressed in monetary or other units. Budget detail may vary based on the needs of the project, funds availability, and accounting rules.

Change control processes are used to capture, assess, approve or reject, track, and implement changes to the product of the project. They may be developed as part of the project or may be provided by the project's parent organization.

Characteristics of the product of the project may include physical dimensions, quality requirements, or other factors that may affect the use of the product of the project. **Desired** characteristics may include characteristics that will not be included in the completed product of the project.

Closure activities may include acceptance testing, finalizing accounts and contracts, releasing project resources, informing stakeholders, celebrating closure, documenting and communicating knowledge, and capturing lessons learned.

Communication needs may include content required, method used (e.g., electronic, phone, meeting), geographical dispersion, protocols, cultural differences, and confidentiality requirements. They may be documented formally or informally and may be included in other project documentation.

Completion criteria may be identified in the plan for the project or may be contained in descriptions of the product of the project such as specifications; user requirements; quality requirements; health, safety, environment, and community requirements; or other application area specific documents.

Consideration of interests should be done in an ethical manner.

Corrective action may include steps taken to prevent future problems, problem solving, communication, conflict resolution, decision making, preparation of change requests, and implementing risk responses. Where the project manager's authority is limited, corrective action may also include requests for action directed to the responsible parties.

Desired characteristics. See *characteristics*.

Determination of evaluation techniques may consider multiple viewpoints and perspectives, cause and effect relationships, validity, sufficiency, reliability, fairness, relevance to project type and context, impact on the project, cost/benefit of the evaluation process, and the use of subject matter experts in the design or conduct of the evaluation process.

Ensuring may include performing, supervising, or directing.

Evaluation may rely on information gained from trend analysis, forecasting, strategic alignment reviews, and reading the internal and external environments.

Evaluation purpose may include who the evaluation is for, what is being evaluated, and what use is to be made of the evaluation. The purpose may be for improvement of current or future projects; for evaluation of project management success, product success, individual or team performance, or organizational capability; or for driving particular aspects of performance.

Evaluation techniques should relate to purpose and may be formative (during the project), summative (at the close of the project), and qualitative or quantitative.

Exclusions are potential work-items, or the results of work-items, that might reasonably be expected by a stakeholder but which will not be included in the work of this project.

External environment may include the organization in which the project is conducted, inter-project dependencies, technological advances, and legal, social, economic, environmental or political changes. The significance of the external factors will vary in relation to the nature of the project.

Expectations. See *interests*.

External stakeholders. See *stakeholders*.

Feedback may be positive or negative and may include follow up activities.

Identified stakeholders See *stakeholders*.

Improvements may include changes to project management processes and procedures as well as to the product of the project.

Individual development involves enhancing individual skills. **Needs** are for skills directly related to the work of the project. **Opportunities** are for skills that benefit the individual or the organization. Development may be provided in formal or informal contexts.

Interests may include needs, wants, expectations, or requirements. Interests may be stated or implied. Interests may be related to the product of the project or to how the activities of the project are conducted.

Interpersonal skills may include leadership skills, verbal and non-verbal communication skills, decision making, dealing with emotions and stress, conflict management, trust building, negotiating, demonstrating sensitivity to diversity issues, and modeling desired behavior. The application of interpersonal skills may be influenced by the phase of the project life-cycle.

Knowledge includes information gained and lessons learned from other projects.

Legal requirements may include legislation and regulations; authority approvals; contract and sub-contract provisions; operational health and safety; discrimination; industrial relations; fair trade; internal business controls; and environmental issues. Contractual provisions may need to be addressed from both the buyer's and the seller's perspectives.

Lessons learned may apply to a single phase, to the entire project, or to future projects, and may include organizational issues.

Measurement may include feedback obtained from stakeholders, variances from plan, changes in stakeholder interests, and changes in assumptions and constraints.

Monitoring in the project context will generally require paying special attention to potential causes or sources of interpersonal conflict.

Needs. See *interests* for stakeholder needs. See *individual development* for development needs.

Opportunities. See *individual development*.

Outcomes are the result of the delivery of the project outputs and may occur after the project is complete.

Participation may include correspondence, attendance at meetings, or review of documentation.

Performance data may include measures collected and analyzed during the project and lessons learned captured during the project.

Phases may also be called stages or iterations. A series of project phases may be called a project life-cycle. Some projects, especially subprojects, may have only a single phase.

Plan for project evaluation should be integrated with the plan for the project.

Prioritization may be based on probability of occurrence, impact on the project, impact on the business, frequency of occurrence, or other factors.

Processes and procedures may exist within the organization or may need to be developed. They may be manual or automated and will normally include at least change control and status reporting. They may also include management plans, work authorization, project governance, and product acceptance.

Product of the project may be a physical item, a service, or other solution and is the primary output of the project at project completion. It may be a component of a larger project. For example preparing a feasibility study or developing a functional specification may be treated as an independent project.

Project closure can occur before planned completion due to unforeseen factors. Premature closure should be authorized and evaluated to determine implications.

Project success criteria are measures that describe how the project will be evaluated. They may be quantitative or qualitative. They may have been defined previously or developed by the project. They may address both the product of the project and the management of the project.

Purpose. See *evaluation purpose.*

Reflection includes self-evaluation and consideration of the project manager's personal contributions to the project.

R**elevant stakeholder**. See *stakeholders*.

R**equirements**. See *interests*.

Resource requirements may include type, quantity, and timing. They may be determined for the overall project or for individual work-items.

Resources may include people, funding, information, time, facilities, supplies and equipment.

Responses. See *risk responses*.

Risk analysis techniques may be qualitative or quantitative and should be chosen based on the management complexity of the project.

Risk prioritization. See *prioritization*.

Risk responses may include mitigation, acceptance (no action), transfer, assignment, and contingency planning.

R**isk.** An uncertain event or condition that if it occurs, has a positive or negative effect on the project. Risks may include generic items such as employee turnover or application area specific items such as health, safety, and environmental issues on a construction project.

Roles may encompass responsibilities, accountabilities, authorities, reporting arrangements, and other required aspects of work performance.

Schedule may be developed using durations (work periods) or elapsed time (calendar periods). Schedule detail may vary based on the needs of the project.

Sequence is the logical and practical ordering of work-items.

Stakeholders include those whose interests are affected by the project. This may include team members, clients, sponsors, internal and external parties, decision makers, and others. The **appropriate** stakeholder may be a client, owner, sponsor, senior executive, or other individual that is vested with the authority to make decisions regarding the project. The **relevance** of a stakeholder may be affected by the impact of the project on the stakeholder, by the impact of the stakeholder on the project, and by cultural or ethical considerations. Different stakeholders are relevant in different situations. **External** stakeholders are those outside the project team. They may be internal to or external to the project manager's organization. The boundary between the external stakeholders and the project team is often indistinct. **Identified** stakeholders may include individuals or organizations who are involved in the use of the product of the project such as clients, customers, business owners, and technology owners.

Start-up activities may be planned separately or may be included in the plan for the project.

Transition activities may include stakeholder meetings, document reviews, or product and project reviews.

Variances, within the context of managing product acceptance, are differences from the agreed product characteristics and include changes that have not been approved. Product characteristics may be specified in project documentation, quality guidelines, or other documents and may be absolutes or may have tolerances. Variances that are within tolerances may be ignored. **Variances**, within the context of managing project progress, may include errors in design or use of processes and procedures. **Variances**, within the context of managing stakeholder communications, may include missing reports, incorrect or misleading content, and late distribution. Communications that fail to satisfy the stakeholders' needs may also be considered variances. **Variances**, within the context of managing external stakeholder participation, may include non-participation, unsolicited or unplanned participation, and other unexpected activities. Minor variances may not require corrective action.

Wants. See *interests*.

Work-item. A segment of the overall work of the project. Work-items may be called work packages, deliverables, outputs, cost accounts, activities, or tasks. They may be represented in an ordered or unordered list, or graphically through a Work Breakdown Structure (WBS) or similar display.

Appendix B
Development of this Document

(informative)

Creation of the GAPPS Organization

Starting in the mid 1990s, people interested in the development of global project management standards began meeting formally and informally during various project management conferences. In 1998, the International Project Management Association initiated a series of Global Working Parties, including one focused on Standards. This Working Party met on a number of occasions, usually associated with project management conferences, and interested people from many countries were involved. A number of initiatives were identified or formulated and tracked. One of these was the opportunity for development of global performance based standards for project personnel that would complement existing knowledge based standards (such as PMI's *A Guide to the Project Management Body of Knowledge*, APM's *Body of Knowledge*, IPMA's *International Competence Baseline*, and Japan's *Project and Program Management for Enterprise Innovation*) and provide a basis for transferability and mutual recognition of project management qualifications.

The development of global performance based standards for project managers, as a joint initiative of governments, professional associations, and corporations, provides an opportunity to:
- Respond directly to the expressed needs of industry.
- Enhance the profile and effectiveness of project management throughout the project management community, both globally and locally.
- Increase support for project management as a field of practice and as an emerging profession.
- Enhance the value and recognition of the performance based standards approach.

The initiative was progressed by development and signing of Memoranda of Understanding (MOUs) to guide cooperation among interested parties. A Global Steering Committee meeting was held in London in August 2002. The meeting was attended by representatives of signatories to the MOUs plus industry representatives and was hosted by the Services SETA (Sector Education and Training Authority) of South Africa. The initiative initially functioned under the name Global Performance Based Standards for Project Management Personnel.

The Global Steering Committee decided to fund the initiative by asking each organization supporting it (professional associations, standards/qualifications organizations, educational institutions, and corporations) to become a financial subscriber to cover research, preparation of materials, maintenance of the global standards website, and administrative support. In addition, the Global Steering Committee decided that the initial focus should be in the development of performance based competency standards for project managers. It was agreed that the initiative would be progressed through Working Sessions attended by representatives of subscribing organizations.

Working Sessions

The first Working Session was held in Lille, France in February 2003. Extensive research was conducted in advance of that session to review and compare project management knowledge guides as well as existing performance based standards and guidelines.

Documents reviewed included those developed in the context of nationally endorsed qualifications frameworks, namely those of Australia, South Africa, and the United Kingdom. The *Project Manager Competency Development Framework* developed by the Project Management Institute, Inc. (USA) and the International Project Management Association's *International Competence Baseline* were also reviewed. Knowledge guides such as the Project Management Institute's PMBOK® Guide, the Association for Project Management's APMBoK (UK) and Japan's Guidebook of Project and Program Management for Enterprise Innovation (P2M) were also included in the review.

From detailed examination of these documents, 48 concepts/topics were identified as covering the major functions that need to be performed by most Project Managers in most contexts. In order to ensure that development of a global framework reflected the content of existing standards and guides, these 48 items were used as a starting point at the first Working Session. The Working Session participants, representing a wide range of industries and nationalities, through a carefully facilitated process, developed and agreed on 13 groupings of the 48 items to be used as an initial set of Units of Competency. Appendix C contains a detail mapping of the 48 items to the current 6 Units of Competency.

The next step was to write Elements of Competency and Performance Criteria using the 48 items and the 13 groupings as a guideline. An initial draft was developed prior to Working Session 2 which was held in Sydney in 2003. The group in Sydney made significant revisions to the draft material and ended with 9 Units of Competency by combining or reorganizing the initial 13 from Lille.

The working group met next in Cape Town in May 2004 and recognized a need for further development of the Role Description. After sessions involving the exploration of examples of projects, and extensive discussion of factors that influenced the outcomes of projects, a core set of elements for describing a range of project contexts was identified.

Working Session 4 was held in Lille in November 2004 and was devoted to further refinement of both the Role Description and the draft of the Global Performance Based Competency Standards for Project Managers. At Lille, the group was supported by a professional competency standards writer from Australia, who has subsequently participated in Working Sessions and continued to support the work of the group.

The fifth Working Session was in Melbourne in February 2005. It continued the work of the fourth session by challenging, refining, and enhancing the draft materials. The result was a polished draft which was sent out to a small, select group of individuals within the project management community for review. A formal process for a public review was also developed at the Melbourne Working Session with input from various organizations that have conducted this type of high level, wide public review previously.

The sixth Working Session was in St. Petersburg, Russia in May of 2005. This session dealt with the feedback that had been received from the informal review and addressed each comment individually. Each Unit of Competency was reviewed in plenary so that all participants in the Working Session were able to contribute to the final editing and review.

The Role Description, now formalized as the Crawford-Ishikura Factor Table for Evaluating Roles (the CIFTER) was also reviewed in plenary; revised, tested against a variety of different projects from different application areas; and found to be a sound tool for the identification of the global project manager roles.

In August 2005 the draft standards were released for public review. The agreed and rigorous review process that had been developed at previous Working Sessions was followed. The feedback received was reviewed by a dedicated team during Working Session 7 in London September 2005. Each item of feedback was addressed individually, the action taken was noted, and the people who provided input were responded to. Once the public review process was complete and all feedback had been addressed, the GAPPS members were asked to vote on both the process and the final document. This document is the result of this process.

Organizations that have subscribed to the initiative include:

Standards and Qualification Organizations:	
Services SETA	South Africa
Innovation and Business Skills Australia	Australia
New Zealand Qualifications Authority	New Zealand
Project Management Professional Associations	
American Society for the Advancement of Project Management (asapm)	USA
Association for Project Management (APM)	United Kingdom
Australian Institute of Project Management (AIPM)	Australia
Greater-China Project Management Association (GPMA)	China
Project Management Association of Japan	Japan
Project Management Institute (PMI)	USA
Project Management South Africa (PMSA)	South Africa
Society for Project Managers (SPM)	Singapore
Academic/Training Institutions	
Cambridge International Examinations	United Kingdom
Athabasca University	Canada
ESC Lille	France
University of Technology, Sydney	Australia
Middlesex University	United Kingdom
Industry	
Project Performance Group	Australia
Project Services, Queensland	Australia
Motorola	Australia
American Express	USA
PSM Consulting	Russia
LivingPlanit	Australia

Appendix C

Mapping of Original 48 Concepts and Topics

(informative)

Research prior to the first Working Session identified 48 concepts/topics that were felt to cover all of the significant functions of a Project Manager in **most** projects in **most** application areas. The table below illustrates the key relationships between the 48 items relate and the 6 Units of Competency in this document. Some of the 48 items are related to more than one Unit since the Elements of Competency are more granular than the 48 items. Only the most significant relationships have been shown below. For example, all 48 items relate in some way to planning, but only the items whose primary focus is planning are listed next to PM02.

These 48 items also reflect the underpinning knowledge and supporting skills needed to produce the results measured by the Performance Criteria.

Unit No.	Unit Title	48 Concepts/Topics	
PM01	Manage Stakeholder Relationships	Benefits Management Conflict Management Goals, Objectives, and Strategies Information/Communication Management Leadership Marketing Negotiation Personnel/Human Resource Management	Procurement Program Management Project Context/ Environment Reporting Stakeholder/Relationship Management Strategic Alignment Success Team Building / Development / Teamwork
PM02	Manage Development of the Plan for the Project	Benefits Management Business Case Cost Management Estimating Financial Management Goals, Objectives, and Strategies Integration Legal Issues Procurement Project Life-cycle / Project Phases	Project Planning Project Organization Regulations Risk Management Safety, Health, and Environment Time Management / Scheduling / Phasing Work Content and Scope Management
PM03	Manage Project Progress	Change Control Conflict Management Configuration Management Cost Management Document Management Information/Communication Management Leadership	Performance Measurement Problem solving Project Monitoring and Control Reporting Resource Management Risk Management Safety, Health, and Environment
PM04	Manage Product Acceptance	Benefits Management Business Case	Regulations Requirements Management

		Design Management Leadership Marketing Quality Management	Success Testing, Commissioning, Handover Technology Management Value Management
PM05	Manage Project Transitions	Integration Management Organizational Learning / Lessons Learned Project Appraisal Project Closeout / Finalization	Project Initiation / Start-up Project Life-cycle / Project Phases Testing, Commissioning, and Handover
PM06	Evaluate and Improve Project Performance	Leadership Organizational Learning / Lessons Learned	(Post-) Project Evaluation Review

List of Concepts/Topics identified in Standards and Guides			
1	Benefits Management	25	Project Appraisal
2	Business Case	26	Project Closeout / Finalization
3	Change Control	27	Project Context / Environment
4	Configuration Management	28	Project Initiation / Start-up
5	Conflict Management	29	Project Life-cycle / Project Phases
6	Cost Management	30	Project Planning
7	Design Management	31	Project Monitoring and Control
8	Document Management	32	Project Organization
9	Estimating	33	Quality Management
10	Financial Management	34	Regulations
11	Goals, Objectives and Strategies	35	Reporting
12	Information / Communication Management	36	Requirements Management
13	Integration Management	37	Resource Management
14	Leadership	38	Risk Management
15	Legal Issues	39	Safety, Health, and Environment
16	Marketing	40	Time Management / Scheduling / Phasing
17	Negotiation	41	Stakeholder / Relationship Management
18	Organizational Learning / Lessons Learned	42	Strategic Alignment
19	Performance Measurement	43	Success
20	Personnel / Human Resource Management	44	Team Building / Development / Teamwork
21	(Post-) Project Evaluation Review	45	Testing, Commissioning, and Handover
22	Problem Solving	46	Technology Management
23	Procurement	47	Value Management
24	Program Management	48	Work Content and Scope Management

Appendix D
Assessment Guidelines
(informative)

This appendix is included in order to provide some basic information for organizations that may wish to develop an assessment process using this standard.

D.1 The Assessment Process

Assessment against performance based standards is the process of collecting evidence and making judgments about whether an individual can perform to the level expected in the workplace as expressed in the relevant standard. All persons involved in the assessment should be given access to a copy of the relevant standard.

The assessment process should include activities to ensure the reliability of the results. In particular, there should be activities to ensure that assessment results are consistent across assessors and over time.

Any GAPPS compliant assessment must use the CIFTER to determine the level at which the candidate project manager is being assessed. The candidate should identify the applicable level by applying the CIFTER to the projects to be used in providing evidence. The candidate's results should be verified by the assessor. Where there is a difference of opinion, an agreed third party should be invited to make a separate determination with the majority position establishing the outcome.

Assessment should be broad enough to include evidence of the achievement of all the performance criteria. Assessment must confirm the inference that competence is (a) able to be satisfied under the particular circumstances assessed and (b) able to be transferred to other circumstances. In order to meet these tests, a GAPPS compliant assessment will normally include:

- A written assessment guide with an evidence guide and suggested questions to verify that the evidence is satisfactory (see section D.3).
- Face-to-face contact in the form of an interview or observation in the workplace.
- Contact with third parties such as the project manager's supervisor, the project client or sponsor, and project team members.

A GAPPS compliant assessment should also be fair. This means that:
- The assessment process is defined, understood, and agreed by all affected parties.
- There is an opportunity for appeal.
- The assessment schedule allows the candidate enough time to prepare.
- Adjustments can be made when candidates have particular needs.

Assessment methods should reflect basic workplace demands such as literacy and the needs of particular groups, including but not limited to:

- People with disabilities
- People from culturally and linguistically diverse backgrounds
- People from economically disadvantaged groups
- People of different ages
- People in rural and remote locations

D.2 Assessor Requirements

Generally, an assessor will need to demonstrate:

- Prior competence as a project manager at or above the level of the candidate being assessed.
- Evidence of currency in the field of project management (e.g., managing projects, consulting on project management, providing training in project management).
- Competence in conducting performance based competency assessments.
- Familiarity with the content and structure of the standard being used in the assessment.

D.3 Evidence Requirements

A GAPPS compliant assessment will include both documentary evidence and process evidence. Documentary evidence may be provided on paper or in electronic form. Most performance criteria will require more than a single piece of documentary evidence. Process evidence will normally be provided in the form of the candidate's answers to an assessor's questions. Process evidence is collected to verify the existence of underpinning knowledge and understanding.

Typically, a GAPPS compliant assessment will evaluate evidence from more than one project.

While the assessor must review and validate the evidence in order to infer that the candidate meets the requirements of the relevant standard, the onus is on the candidate to demonstrate that the evidence provided is:

- Authentic — that it reflects the candidate's own work as a project manager.
- Valid — that the evidence relates to the current, relevant version of the standard, and that it was obtained from a project that meets the requirements for the role assessed.
- Reliable — that the candidate consistently meets requirements in the standards.
- Current — that the bulk of the work of the projects being used to provide evidence was done during the period required by the relevant standard.
- Sufficient — that it addresses all of the performance criteria in enough detail to provide assurance that the candidate's performance is likely to be repeatable on a future project.

Appendix E
Detail on CIFTER Ratings
(informative)

In order to illustrate the use of the Crawford-Ishikura Factor Table for Evaluating Roles (CIFTER), nine sample projects from three different application areas were selected and rated as discussed in Section 3. This appendix contains a more detail discussion of the thinking behind the ratings.

Sample Project	Project Management Complexity Factor							Total Score
	1. Stability	2. No. of Methods	3. Implications	4. Financial Impact	5. Strategic Importance	6. Stakeholder Cohesion	7. Project Interfaces	
A	1	1	1	1	1	1	1	7
B	2	2	2	2	3	2	2	15
C	3	2	3	2	4	3	3	20
D	1	1	1	1	1	1	1	7
E	2	2	1	2	2	2	2	13
F	4	2	4	3	3	3	3	22
G	1	1	1	2	2	1	1	9
H	2	1	2	2	2	2	2	13
I	3	3	2	2	3	4	3	20

A. Social/public services project: develop a three-hour employee orientation program for a municipal department.

Factor	Rating	Discussion
1. Stability	1	Very high — requirements are clear, limited scope, stakeholders unlikely to change
2. Number of methods	1	Low — only one discipline involved
3. Implications	1	Low — might be some legal implications if content violated discrimination laws; no discernable environmental or social impact
4. Financial impact	1	Low — insignificant; no revenue and funds were budgeted
5. Strategic importance	1	Very low — orientation is important but not strategic
6. Stakeholder cohesion	1	High — management and team are in agreement about scope
7. Project interfaces	1	Very low — few interfaces and those are quite similar

B. Social/public services project: develop and implement an in-house training program on a new, computerized point-of-sale system for the automobile driver licensing unit of a state or province.

Factor	Rating	Discussion
1. Stability	2	High — scope is known and well-defined, but the extended project duration due to the need to roll out across multiple sites could create some instability over time
2. Number of methods	2	Moderate — project includes training needs analysis, training program development, training delivery, and technology
3. Implications	2	Moderate — some limited social implications due to public visibility of new system
4. Financial impact	2	Moderate — cost of training program is a small percentage of the overall department budget but a substantial portion of the training department's budget
5. Strategic importance	3	Moderate — new system is key element in improving the unit's sagging reputation
6. Stakeholder cohesion	2	Moderate — as some stakeholders do not want new system
7. Project interfaces	2	Low — fairly large number of interfaces due to number of locations; some variety due to interface with technology supplier

C. Social/public services project: develop and implement a new science curriculum for the final, pre-university year in all schools in a state or province.

Factor	Rating	Discussion
1. Stability	3	Moderate — while many aspects of the project context are quite stable, the sensitivity of the issue and the visibility of the project means that stakeholder identification and management will be challenging
2. Number of methods	2	Moderate — disciplines include curriculum design, subject matter expertise, teacher professional development, marketing, and communications
3. Implications	3	High — environmental implications are low, but social and legal implications are significant
4. Financial impact	2	Moderate — cost is small relative to overall schools budget
5. Strategic importance	4	High — this is the first new curriculum development project in several years; this project must go well or later projects will be severely challenged
6. Stakeholder cohesion	3	Low — resistance to new curriculum is evident among some stakeholders
7. Project interfaces	3	Moderate — numbers and variety are both moderate; project must interface with multiple units of the state or provincial education department, with organizations representing different school providers, and with teachers unions, school boards, parent associations, special interest groups, and others

D. Information Technology project: implement a software package upgrade in a single business functional area.

Factor	Rating	Discussion
1. Stability	1	Very high — requirements are clear, limited scope, stakeholders unlikely to change
2. Number of methods	1	Low — one primary discipline; limited involvement of others
3. Implications	1	Low — no real discernable impact in any area
4. Financial impact	1	Low — cost is small for functional unit; revenue is small for provider; probability of an overrun is slight
5. Strategic importance	1	Very low — operational project with limited strategic impact
6. Stakeholder cohesion	1	High — everyone agrees upgrade is necessary
7. Project interfaces	1	Very low — few interfaces and those are quite similar

E. Information Technology project: design a new corporate website for a multi-national manufacturing company.

Factor	Rating	Discussion
1. Stability	2	High — since this project includes only the design phase, the context should be quite stable; the implementation phase will be a greater management challenge
2. Number of methods	2	Moderate — project requires several kinds of technical knowledge, artistic talent, sensitivity to cultural issues, and an appreciation for the company's business objectives
3. Implications	1	Low — no real discernable impact in any area
4. Financial impact	1	Low — cost of design project is immaterial from an accounting perspective and most work will be done in-house
5. Strategic importance	2	Low — web presence is important but not strategic for this organization
6. Stakeholder cohesion	2	Moderate — most stakeholders agree on the need for a redesign, but there are likely to be differences about structure and architecture of the site
7. Project interfaces	2	Low — moderate number of interfaces due to number of countries involved; limited variety since all same company

F. Information Technology project: implement an Enterprise Resource Planning application across business areas in an environment where the success or failure of the implementation has significant legal implications.

Factor	Rating	Discussion
1. Stability	4	Low — length and overall business impact of ERP system will make stakeholder identification and management challenging
2. Number of methods	2	Moderate — several different technical disciplines will be involved from IT and all aspects of the business (marketing, sales, manufacturing, etc.) will be affected as well
3. Implications	4	Very high — environmental and social implications are low, but legal implications related to issues such as privacy and non-discrimination are significant
4. Financial impact	3	High — this is a major investment for the company; careers of key stakeholders will also be affected; the project is material from an accounting perspective for some of the suppliers
5. Strategic importance	3	Moderate — the application is being implemented in order to support several strategic initiatives
6. Stakeholder cohesion	3	Low — while there is widespread agreement on the need for the system and on the core features, there are widespread differences about ancillary features
7. Project interfaces	3	Moderate — numbers are fairly high while the variety is low to moderate; project must interface with multiple departments and multiple locations as well as several vendors

G. Engineering and Construction project: construction management for a small addition to a local school done mostly during summer vacation.

Factor	Rating	Discussion
1. Stability	1	Very high — requirements are clear, limited scope, stakeholders unlikely to change
2. Number of methods	1	Low — relatively simple design; number of trades involved

		limited
3. Implications	1	Low — no significant impact in any area
4. Financial impact	2	Moderate — significant expenditure for the school district but supported by bond issue; smallish project for the contractor
5. Strategic importance	2	Low — needed to accommodate expected influx of students from nearby residential development
6. Stakeholder cohesion	1	High — district board, school management, and neighbors all supportive
7. Project interfaces	1	Very low — school board and neighborhood council

H. Engineering and Construction project: construction management of the renovation of a small, suburban office building.

Factor	Rating	Discussion
1. Stability	2	High — building is vacant, so relatively easy to renovate, but need to be careful about disturbance to neighboring buildings
2. Number of methods	1	Low — only internal renovations, nothing structural; several trades involved but all work is straightforward
3. Implications	2	Moderate — may be some asbestos removal involved
4. Financial impact	2	Moderate — medium size project for both owner and prime contractor
5. Strategic importance	2	Low — owner has many other properties; renovations are staple of contractor's business
6. Stakeholder cohesion	2	Moderate — owner has reputation for requesting many changes
7. Project interfaces	2	Low — number and variety are both low

I. Engineering and Construction project: construction management of the renovation of a 30 storey hotel for an international hotel chain.

Factor	Rating	Discussion
1. Stability	3	Moderate — project duration is quite long and there is likelihood of turnover among key stakeholders; owner's co-coordinator has little power to make decisions
2. Number of methods	3	High — relatively complex project involving core disciplines such as engineering, plumbing, and HVAC, as well as specialists in interior design, landscape design, and artwork installations
3. Implications	2	Moderate — mostly environmental as the site is relatively large; neighboring plots may be affected
4. Financial impact	2	Moderate — financial impact on the chain is limited, but this is a major project for the prime contractor
5. Strategic importance	3	Moderate — important first step in the chain's plans to establish foothold in rapidly developing region
6. Stakeholder cohesion	4	Very low — while basic specifications have been agreed, there are many details to be worked out and many conflicting requirements
7. Project interfaces	3	Moderate — project is fairly large and involves many specialties