# Organisational Project Management Competency Frameworks

European Construction Institute

# Organisational Project Management Competency Frameworks - Design and Implementation

The European Construction Institute was founded in 1990

Its vision is of:

*A strong, globally competitive European engineering and construction industry able to meet the challenges of world class project delivery*

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# Glossary

To assist in your understanding of this report, the ECI PEOPLE Task Force has chosen to define relevant terms. The definitions may have alternative implications within published frameworks and academic articles cited.

Within this report:

**Competence** (or competences) "encompass demonstrable performance outputs as well as behaviour inputs, and may relate to a system or set of minimum standards required for effective performance at work"[i]. In the past competence "was used to describe what people need to do to perform a job and was concerned with effect and output rather than effort and input"[i].

**Competency** (or competencies) are defined "as the behaviours (and, where appropriate, technical attributes) that individuals must have, or must acquire, to perform effectively at work - that is, the terms focus on the personal attributes or inputs of the individual"[i]. Historically described as "the behaviour that lies behind competent performance, such as critical thinking or analytical skills, and described what people bring to the job"[i].

**Competence Framework** refers to an accepted standard of performance.

**Competency Framework** refers to a systematic means of identifying those competencies important to achieving organisational and individual success and assessing their presence for the purpose of identifying development needs and opportunities.

**Career Development Programmes** cover a range of activities which typically include the setting of objectives for development (e.g. through a personal development plan), formal and informal appraisal, developmental feedback and career support from the employer, other managers or peers; informal career support from HR or training function and developmental programmes which may include work or career experience [ii].

**Project Management Competency Framework (PMCF)** is used in this report to denote an organisational project management competency framework.

**Attribute based competency statements** refer to the identification of personal attributes such as knowledge, behaviour, skills and attitudes [iii].

**Performance based competence statements** refer to the demonstrated ability of work outcomes and performance levels against a set of agreed criteria [iii].

[i] CIPD, 2011; [ii] King, 2004; [iii] GAPPS, 2010

# Executive Summary

Developing effective and appropriate tools for project management career development is fundamental to the engineering construction industry. Critical to this process is understanding how to navigate and take full advantage of available published works in support of a business case for future programme investment.

The work of the ECI PEOPLE Task Force aims to assist organisations in developing bespoke tools for enhanced project management capability and project delivery. The ECI PEOPLE Task Force has compiled this report with the aim of supporting ECI member organisations through the provision of guidance on how to develop and implement an organisational Project Management Competency Framework (PMCF). The report does this by assembling relevant information and resources in an accessible format. Accompanying this is guidance for assessing the maturity of the organisational career development programme, developing a PMCF and the associated programme of interventions, accompanied by suggested further reading.

This report supports organisations in addressing key issues related to:

- Unnecessary expenditure of resources to reinvent the wheel and target incorrect competencies and/or with ineffective development interventions;
- Understanding the scope of the solution required to maintain or enhance competitive advantage; and
- Utilisation of published competence frameworks for purposes that they weren't originally designed for.

    The report provides clarity around:

- The lack of understanding of role and purpose of competence frameworks;
- Utilising published works as a foundation for PMCF development in anticipation of future requirements i.e. registers and certification;
- Alignment with technical competencies and the impact of correct identification of behavioural and contextual elements on competitive advantage; and
- A tailored approach to designing and implementing a framework and appropriate development interventions – one size does not fit all.

# 1. Introduction

### *What is a project management competency framework?*

A Project Management Competency Framework (PMCF) defines the individual attributes required for the successful delivery of projects within an organisation and serves as a route for the identification of areas for project management capability enhancement.

### *Why might an organisation develop and implement a PMCF?*

The development of an organisational PMCF provides a means for translating the organisational objectives and long-term goals to an individual level and provides a framework for assessing the suitability of an individual to their role and identifying development needs. Within the engineering construction industry there is a low level of maturity with respect to the development of organisational Project Management Competency Frameworks. This is the result of there being little guidance concerning the organisational use of published project management competence frameworks or standards, especially how to identify the elements critical to an organisation's unique project environment. Unnecessary resources are expended by organisations in an attempt to navigate the varying taxonomy and granularity of published frameworks. As a result of this many organisations invariably choose to adopt an existing model and hope that by aligning themselves with these requirements their project management performance will improve.

This document describes the competence frameworks published by project management bodies relevant to European engineering construction organisations. It must be noted that these frameworks are designed to benchmark an individual's compliance against agreed standards. Therefore, they are not suitable for the identification of the personal attributes key to delivering successful projects past a threshold level of 'acceptable' performance. The objective of organisational frameworks should be to promote superior performance of project managers through the articulation of the competencies critical to the success of their projects.

This report will support organisations within the European engineering construction industry in the identification of their particular project management development needs through the provision of a clear process for designing or enhancing project management career development programmes.

## 1.1 Aim of the Report

The aim of the report is to provide guidance for ECI member organisations on how to design and implement a Project Management Competency Framework with associated recommended development interventions.

The information contained within the report will help those tasked with project management learning and development to:

- Consider the maturity and effectiveness of their current PM CPD programme;
- Identify the need for a PMCF;
- Articulate the business case for further PM CPD investment;
- Clarify the link between PM certification and company processes and knowledge areas; and
- Develop and incorporate a PMCF and associated interventions.

The report covers:

- A collation of key publications and issues from project management bodies and academia in this area;
- Overview of the findings from ECI member organisations on their use of competency frameworks;
- An example of relevant project management competence/y elements;
- Guidance for the development of an engineering construction PMCF; and
- Information concerning the design of a related programme of interventions.

## 2. Organisational Competency Frameworks – Key Lessons from Academic Research

Critical to moving any industry forward is using research to inform practice. The following is a compilation of key lessons from academic research pertaining to the development of organisation specific Project Management Competency Frameworks. Drawing from academic works will help to support a robust business case for development investment.

**The impetus for having a competency framework:**

- Improving the competency of project managers is crucial within the engineering construction industry due to the impact of projects on business success[1,2];
- Logic deduces that project manager competency is a key factor influencing project outcomes[3] and there is an increasing recognition of the positive correlation between competency and successful projects[4];
- Organisations require a means for assessing project management competency due to the variations in background and experience of project managers;
- Competence or functional competence frameworks only measure output-based performance and not the attributes of superior performance[4] which are required to support a development programme;
- Competency-based approaches engender the professional development of construction project managers[4];
- Competency considers constituent elements key to business success such as skills, capabilities, knowledge, learning, coordination, organisation and relationships[5,6,7,8,9]; and they
- Allow individuals and organisations to address skill gaps[10];

**Considerations when instituting or designing a competency framework:**

- There is no evidence that one framework is better than another;
- Organisational culture, learning and project management capability lay the foundations for developing a Project Management Competency Framework[11];
- The uncertainty associated with today's business environment requires the development of new competencies in project management[11]; and
- Therefore, many construction organisations are looking beyond the core model to the behavioural competency required by key staff[4].

[1]Edum-Fotwe, F.T., McCaffer, R. 2000; [2] Kangari, R. 1988; [3] Stevenson, 2009; [4] Ahadzie et al, 2008; [5] Prahalad and Hamel, 1990; [6] Schoemaker, 1999; [7] Leonard-Barton, 1992; [8] Dosi and Teece, 1993; [9]Sanchez, 2004; [10] ECITB, 2010; [11] Suikki et al, 2006.

## 3. Organisational Competency Frameworks - Key Lessons from ECI Industry Interviews

This section highlights the key findings from ECI solicited interviews conducted to investigate project manager development in engineering and construction organisations. The interview questions can be found in Appendix A.

**Emergent themes from the survey of EC organisations:**

*A framework needs to be "robust and custom made, built from the base up. If it was a generic framework it would be a waste of time"*

*"Previously supervisors became site managers, but they only really understood the construction element. A step change was implemented to ensure that improved project management was the way forward"*

*With respect to progression on average for our employees to reach the next level within their career path it takes, "roughly 3-4 years".*

*A typical career path "usually starts with a 2 year graduate programme. It then takes three or four years to get professional competence in the technical competence such as civil engineering."*

- Organisations tended to use or base work on existing competence frameworks, generally APM or PMI;

- Organisations and clients have a broad expectation of what it is to be a PM even if they do not currently have a competency framework;

- There is recognition that a competency framework needs to be organisation specific, relating to project type and other company processes.

- Organisations recognise the interaction between different organisational and project roles and the impact this has on competency development.

- There is a time-related barrier associated with individuals implementing a competency framework and delivering the required development interventions;

- Project management career paths are expressed in performance and experience not competency terms;

- There are some broad and similar expectations regarding how long it takes to progress between project management levels.

*"Frameworks are used to assess and assure that (organisations) have the correct project management people."*

*"Used to satisfy company requirements to confirm competence to carry out the project manager role. The HSE are seeking confirmation that all employees are competent enough to carry out their job, so this requirement also needs to be satisfied"*

*"The frameworks also identify development and training needs."*

*"They play important role in our organisation, but are still evolving."*

*"The skill set required for project managers is different to the skill set required by line managers… Some individuals get through to senior levels and are then stopped as they do not have the behavioural, leadership and interpersonal skills to advance but are very good project people."*

- There is a lack of clarity regarding the purpose of competency frameworks.

- There are a number of perceived gaps in project manager competency e.g. behavioural and change management. There is little evidence of a systematic approach to evaluating these;

- A reliance on using track record and line manager review for assuming competency, especially contextual and behavioural. These tended to be anecdotal rather than structured;

- A variety of development interventions are in place, i.e. technical, non technical, internal, external, online training, experiential learning, on the job learning, mentoring, and shadowing;

- Evaluation of the effectiveness of interventions is weak;

- There was some evidence of the use of psychometric or personality profiling in conjunction with competence/competency frameworks; and

- All organisations within the sample recognised the impact of project complexity, discipline, size and lifecycle phase had on the required competencies.

*"The different stages within the project life cycle are recognised to require different competencies. In the early stages there is a bias towards the engineering and technical disciplines with business skills required (negotiation is very important here, e.g. gaining access into an existing oil pipeline). The later stages require a performance and leadership bias."*

*"One project manager who can manage one sector cannot necessarily manage another sector as successfully. Past successes and experience in projects they are looking to manage makes them a relevant candidate (for managing a similar project."*

*"Different scales of project require managers to have different competency sets."*

*"The complexity and size of a job will change the competencies that are required of the project manager."*

## Lessons

The lessons from industry support and strengthen the academic findings and the need to understand the organisational requirements, the intent of published works and the benefits that can be extracted from their use. First, it is important to reflect on the scope of the solution the specific organisation requires, the maturity of the current project management career development programme and future needs for enhanced project management capability, capacity and competitive advantage. Following this reflection, published project management frameworks and standards can then be responsibily used, given an understanding of their role and purpose, as a basis for developing customised tools. The following sections detail the development, structure and content of a number of relevant works and the process of developing a organisation specific PMCF.

# 4. A Review of PM Competence Frameworks / Standards

Competence frameworks described in this report provide a guide to the level of acceptable workplace performance and therefore, are useful in gauging an organisation's current and/or threshold project management capability. They aim to provide the means to assess whether someone is a competent project manager and, in most cases, if they have reached a standard to achieve some form of certification supported by one of the PM professional organisations. They are, by their nature, devised to be cross-sectoral. They claim to be applicable to any context in which project management is undertaken.

They can also be used in conjunction with tools such as CIFTER (Crawford-Ishikura Factor Table for Evaluating Roles) for project categorisation for personnel selection. The CIFTER tool distinguishes project management roles by the level of project complexity based on seven factors or causes of project complexity. Further information pertaining to the CIFTER tool can be found at:
http://www.globalpmstandards.org/main/page_complexity.html

In general, published project management competence frameworks are defined by a combination of:

- units of competency providing a broad area of practice, generally subdivided into technical or process related topics, behavioural or 'softer' skills and the contextual factors attributed to the work and external environment;
- elements of competence providing key descriptions of performance;
- indicators or performance criteria related to the elements; and
- threshold range statements.

The PMBoK related competence frameworks reviewed in this report include:

**Global**
- The ICB-IPMA Competence Baseline, version 3.0;
- The PMI Project Manager Competency Development Framework, 2$^{nd}$ ed.;
- The APM Competence Framework;
- The AIPM Professional Competence Standards for Project Management;
- GAPPS Framework for Performance Based Competence Standards for Global Level 1 and 2 Project Mangers;
- The UK National Occupational Standard for Project Management; and

**Industry**
- ECITB Project Management Competency Framework.

The following table describes the development and structure of each of these frameworks.

This table has used the 2008 version of the frameworks, which tend to be adapted from time to time.

Note: terms in this table are those used by the works cited and therefore may not reflect the definitions outlined in the glossary.

## ICB-IPMA

### Development

The ICB-IPMA Competency Baseline was devised originally in the 1990's by the International Project Management Association (IPMA) from four existing competency frameworks that were in global use. It was created using international experience but with no input of empirical evidence. Its primary use is for certification and it is designed to be used across all sectors.

### Access

The framework can be accessed from the IPMA website or additionally from

http://ipma.ch/certification/competence/ipma-competence-baseline/

### Structure

The framework contains three competence ranges with related technical, behavioural and contextual competence elements. Knowledge and experienced are assessed against possible process steps, topics addressed and key competences by level using a rating scale from no competence to absolute maximum, from 0 to 10 respectively.

The associated certification levels include Certified Projects Director (Level A), Certified Senior Project Manager (Level B), Certified Project Manager (Level C) and Certified Project Management Associate (Level D).

## PMI

### Development

The Project Management Institute (PMI) Project Manager Competency Development Framework (in its 2nd ed.) was first released in 2002 guided by the belief that individual competency played a significant role in project success. It was specifically designed to be simple to understand and use and to cover all the competencies required by a project manager to be able to do his or her role regardless of sector. It relates very closely to the PMI's Project Management Body of Knowledge and evidence of this can be seen in the way that the framework is structured. While its purpose is for professional development it still maintains the content is based on the demonstration of ability to defined and accepted standards.

### Access

The framework can be ordered from the PMI online marketplace at http://marketplace.pmi.org/Pages/ProductDetail.aspx?GMProduct=00101024401

### Structure

The framework is divided into units of performance competence (five units) and units of personal competence (six units). It should be noted that the framework refers also to another dimension of project manager knowledge competence although this is said to be assessed via the accreditation process.

The units are defined by their elements of competence and the associated performance criteria and types of evidence. The performance criteria and types of evidence are to be self and reviewer assessed within an assessment log with recommended levels of: below expectation of developing competence; meets expectations or is competent; and exceeds expectations or highly competent. For example development

## APM

### Development

The Association of Project Management (APM) Competence Framework is closely related to the 2006 APM Body of Knowledge document. The framework mirrors the IPMA framework and has been designed to be used by employees for their HR management purpose but also by the APM for accreditation.

### Access

Ordering instructions can be found on the APM website at http://www.apm.org.uk/APMCompetenceFramework.asp

### Structure

The framework is sub-divided into three competence domains: technical, behavioural and contextual. Each domain contains competence elements: 30 technical; 9 behavioural; and 8 contextual. Elements are further broken down into competence indicators which allow scoring based on both knowledge and experience. Scoring is from 0 to 10 and tied into the accreditation levels. The APM levels of competence include: projects director (Level A); senior project manager (Level B); project manager (Level C); and project management associate (Level D). Associated knowledge and experience scores are detailed following each element.

## AIPM

### Development

The Australian Institute of Project Management (AIPM) Professional Competency Standards for Project Management were developed for application to a range of industries and projects. The standards are used to assess entry to the Reg PM Program with separate standards issued for existing levels by Innovation and Business Services Australia (IBSA). They were developed via a review of current trends and skills gaps and consideration of existing publications including the AIPM project management standards, the IPMS standards, the APM standards, the PMI standards, the Complex Project Manager standards (College of Complex Project Managers) and the IBSA project management standards.

### Access

The standard can be downloaded from http://www.aipm.com.au/html/pcspm.cfm

### Structure

The standards are separated into four sections: Project Director (Part D); Project Manager (Part C); and Project Practitioner (Part B); and Introduction (Part A). The standard for Executive Project Director is not yet validated.

The standards are comprised of units, made up of elements of competency and the associated performance criteria and range indicators along with knowledge and skills and evidence guides.

The standards detail the minimum assessment requirements for each level in terms of demonstration of competency and knowledge attributed to each of the units.

## NOS

**Development**

The National Occupational Standards (NOS) for Project Management is a UK based competency framework based on standards first developed by an national Engineering Skills organisation in 1996. Despite the introduction of the standards, little evidence was found that they were being used in their originating sectors though other non-engineering sectors were using them. In the lights of this, the framework was relaunched in 2002 with an explicit intent to cover all sectors and to provide a tool not only for evaluation of competence but for designing project management training.

**Access**

The framework is currently owned by the ECITB and is undergoing a substantial revision.

**Structure**

The framework has 51 units broadly aligned with the project life cycle. Each unit is structured in terms of a commentary about the unit, the 'learning outcomes' for the unit, the scope of the unit and the knowledge required by the unit. Units cover both 'technical' and 'behavioural' competencies. The framework does not cover 'levels' of competency.

## GAPPS

**Development**

The Global Alliance for Project Performance Standards (GAPPS) standards is a performance based competency standard developed to be applicable across organisations, application areas and projects. The standard can be used for mapping against other standards, as the basis for creating customised organisational standards, assessment of individual project managers, or training course review.

**Access**

The standards can be found at
http://www.globalpmstandards.org/main/page_project_manager_standard.html

**Structure**

The standard supports the identification of threshold competency for two levels of project manager - Global Level 1 and Global Level 2 using the CIFTER tool for differentiation of management complexity. The standard is comprised of six units of competency with associate elements, performance criteria and range statements.

## ECITB

**Development**

The Engineering Construction Industry Training Board (ECITB) framework is a self-assessment tool based on five UK recognised project management related frameworks and standards developed in conjunction with a steering group of L&D professionals. The frameworks included the PM NOS Control, PM NOS Leadership, RICS, APM Competence Framework and the PMI Competency Development Framework.

**Access**

The framework can be accessed at
http://www.ecitb.org.uk/Publications/

**Structure**

The framework consists of 25 system and process units of competence and 33 leadership units. A 5 level scoring mechanism is used (0 to 4) with respect to the level of knowledge and experience.

0 - no knowledge, 1 - knowledge, 2 - comprehension/understanding, 3 - application, 4 - strategic application
Users can compare individual results with the suggested levels of:

Level A - Project Director; Level B - Project Manager (Complex Projects); Level C - Project Manager/Senior Engineer (Non-complex projects); Level D - Project Engineer/Project Lead

**Framework Content**

The following table presents the content of specific competence frameworks (including an academic model) that may be relevant to the engineering construction sector. Those responsible for development may wish to consider these frameworks but should not limit them. The frameworks can serve as a benchmark of current project management capability and development and as a starting point for the design of a PMCF as described in the Section 5.

## PMI

**Performance Competencies**

1.0 Initiating a Project
2.0 Planning a Project
3.0 Executing a Project
4.0 Monitoring and Controlling a Project
5.0 Closing a Project

**Personal Competencies**

6.0 Communicating
7.0 Leading
8.0 Managing
9.0 Cognitive Ability
10.0 Effectiveness
11.0 Professionalism

## Edum-Fotwe and McCaffer - CPM

**Essential PM Skills**

Leading
Communicating
Negotiating
Problem solving

**Primary knowledge and skill elements**

Planning and scheduling
Construction management activities
Basic technical knowledge in own field
Productivity and cost control
Leadership
Delegation
Negotiation
Decision making
Motivation and promotion
Team working
Top management relations
Establishing budgets
Reporting systems
Drafting contracts
Presentation
General and business correspondence
Report writing
Chairing meetings
Understanding of organisation

## APM

**Technical Competence**
TCO1 Concept
TCO2 Project success and benefits management
TCO3 Stakeholder management
TCO4 Requirements management
TCO5 Project risk management
TCO6 Estimating
TCO7 Business case
TCO8 Marketing and sales
TCO9 Project reviews
TC10 Definition
TC11 Scope management
TC12 Modelling and testing
TC13 Methods and procedures
TC14 Project quality management
TC15 Scheduling
TC16 Resource management
TC17 Information management and reporting
TC18 Project management plan
TC19 Configuration management
TC20 Change control
TC21 Implementation
TC22 Technology management
TC23 Budgeting and cost management
TC24 Procurement
TC25 Issue management
TC26 Development
TC27 Value management
TC28 Earned value management
TC29 Value engineering
TC30 Handover and closeout

**Behavioural Competence**
BC01 Communication
BC02 Teamwork
BC03 Leadership
BC04 Conflict management
BC05 Negotiation
BC06 Human resource management
BC07 Behavioural characteristics
BC08 Learning and development
BC09 Professionalism and ethics

**Contextual Competence**
CC01 Project sponsorship
CC02 Health, safety,& environmental man.
CC03 Project life cycles
CC04 Project finance and funding
CC05 Legal awareness
CC06 Organisational roles
CC07 Organisation structure
CC08 Governance of project management

## ECITB

**Systems & Processes**
SP1 Project, prog. & portfolio implementation
SP2 Legal
SP3 Legal-2
SP4 Project appraisal
SP5 Contract & procurement
SP6 Contract & procurement-2
SP7 Interested parties
SP8 Business
SP9 Scope & deliverables
SP10 Scope & deliverables-2
SP11 Risk & opportunity
SP12 Change management
SP13 Information & documentation
SP14 Information & documentation-2
SP15 Information & documentation-3
SP16 Control & reporting
SP17 Control & reporting-2
SP18 Control & reporting-3
SP19 Cost & Financial management
SP20 Cost & finance
SP21 Financial management
SP22 Health, security, safety & environment
SP23 Time & project phases
SP24 Conflict management
SP25 Close-out

**Leadership**
L1 Leadership
L2 Leadership-2, L3 Leadership-3
L4 Leadership-4, L5 Leadership-5
L6 Leadership-6, L7 Leadership-7
L8 Engagement
L9 Assertiveness
L10 Creativity
L11 Negotiation
L12 Ethics
L13 Values appreciation
L14 Interested parties
L15 Interested parties-2
L16 Project orientation
L17 Project requirements & objectives
L18 Project requirements & objectives-2
L19 Scope & deliverables
L20 Contract & procurement
L21 Time & project phases
L22 Risk & opportunity
L23 Project structures
L24 Systems, products & technology
L25 Quality management
L26 Business
L27 Health, security, safety & environment
L28 Control & reporting
L29 Control & reporting-2
L30 Information & documentation
L31 Personal development
L32 Close-out

## IPMA

**Contextual Competences**

Project orientation
Programme orientation
Portfolio orientation
Project, programme and portfolio implementation
Permanent organisation
Business
Systems, products and technology
Health, security, safety and environment
Finance
Legal

**Behavioural Competences**

Leadership
Engagement and motivation
Self-control
Assertiveness
Relaxation
Openness
Creativity
Results orientation
Efficiency
Consultation
Negotiation
Conflict and crisis
Reliability
Values appreciation
Ethics

**Technical Competences**

Project management success
Interested parties
Project requirements and objectives
Risk and opportunity
Quality
Project organisation
Teamwork
Problem resolution
Project structures
Scope and deliverables
Time and project phases
Resources
Cost and finance
Procurement and contract
Changes
Control and reports
Information and documentation
Communication
Start-up
Close-out

# 5. Developing an Organisational PM Competency Framework

The competence frameworks discussed in this report provide an extensive menu approach to identifying project management competences but do not address the career development issues around how these competences are to be acquired, when and at what level or for what kind of project.

Competency frameworks can however be a basis for checking and benchmarking project management competencies and therefore highlighting development needs. Organisations can use competence frameworks as a basis for supplementing or developing project management career development programmes through the development of organisation specific, competency frameworks. In doing so, those tasked with project management capability development need to consider the context in which their project managers operate. The standards should be used as a guide to move beyond acceptable performance based statements to define superior attribute based competencies for the identification of organisational and individual development needs. Future methodology alignment with a body of knowledge and the incorporation of accreditation requirements should also be considered within this process.
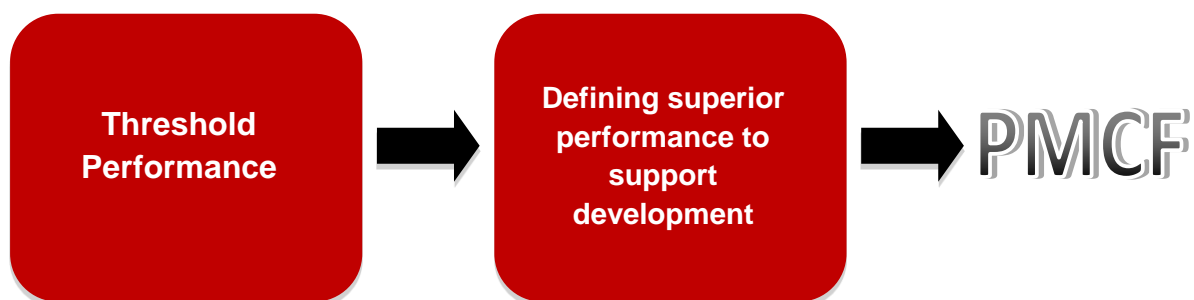


The elements (or other relevant publications), introduced within the previous section, can be mapped against organisational competency requirements when developing a project management competency framework for an organisation. A step-by-step guide to this process follows including:

> Sheet A – Flowchart for evaluating need and designing an organisational competency framework, based on accepted practice of defining elements related to technical, behavioural and contextual requirements, and the identification of a related programme of interventions; and

> Sheet B and C – Worked organisational examples.

**1.0**  Understanding the Need                                                                                **A**

**1.1**  **INFORMATION GATHERING**

What type of projects are you undertaking? Purpose of projects?
What are your organisational project management needs? Roles and responsibilities?
Do you have requirements tied to certification or work winning?
How is existing project management capability currently assessed?
What competencies are important to your business / sector?
How are competence/y gaps identified? How do you address these gaps?
What tools and processes are in place? Career paths? Project manager job profiles?
Project categorisation? Performance Review / PDR/Personality / Competency Assessment?

Output

An understanding of programme maturity and the level of challenge and the type of competencies and tools required by your organisation for PM capability enhancement

**Determine the need for a PMCF and the context / content required**

**2.0**  Developing a Project Management Competency Framework

**2.1**  **IDENTIFY TECHNICAL ELEMENTS**

Which body of knowledge/methodology do you align with?
Do you currently require staff to be certified?

Mapping
APMBoK
PMBoK
IPMA Baseline
Organisational Methodology

Output

**ORGANISATIONAL TECHNICAL COMPETENCY UNIT**

Highlight key technical elements from BoKs and develop attribute-based indicators of superior not threshold competency.

**2.2**  **IDENTIFY BEHAVIOURAL ELEMENTS**

Which behavioural competencies were identified in Step 1.1?

Example Element: **Leadership**

Mapping

APM BC03 Leadership
APM BC07 Behavioural Characteristics
APM BC09 Professionalism and Ethics
PMI Unit 7.0 Leading
PMI Unit 8.0 Managing
EDUM Leading
ECITB L1 Leadership
ECITB L5 Leadership

Output

**ORGANISATIONAL BEHAVIOURAL COMPETENCY UNIT**

Highlight key behavioural elements from frameworks and develop attribute-based indicators of superior not threshold competency.

**2.3**  **IDENTIFY CONTEXTUAL ELEMENTS**

What organisational and project environment issues were identified in Step 1.1?

Mapping

APM Contextual
ECITB System & Process
IPMA Contextual

Output
**ORGANISATIONAL CONTEXTUAL COMPETENCY UNIT**
Highlight key environmental elements from frameworks and develop attribute-based indicators of superior not threshold competency.

**3.0**  Identify Associated Interventions

## Example Organisation 1

B

Energy sector
Mega projects
Global marketplace

Existing development programme consists of:
annual development reviews; annual performance reviews;
beginner and advanced PM training; APM PQ qualification

**Developed an organisation specific competency
profiling framework**

### TECHNICAL ELEMENTS

Delivering
Integrating
HSSE
Policies and Standards
IT Skills
Project Control
Contract and Procurement

### EXAMPLE INDICATORS

Delivering

Time management, planning and delegation

Plans for the longer term and can handle work of significant scale and complexity. Fully understands the broad consequences and impact of plans and decisions. Takes full responsibility for the successful communication and delivery of plans across the group. Fully understands the capabilities of their people and uses this to delegate the right work to the right people.

### BEHAVIOURAL ELEMENTS

Leadership
Networking
Growing
Human Resources
People
Management of Change

### EXAMPLE INDICATORS

Leadership

Engaging and facilitating teams

Improves the performance of teams by injecting energy and enthusiasm for their objectives. Builds teams with a sense of purpose and real ownership of issues. Builds a climate where team members motivate and support each other by role modeling this behaviour and rewarding it in others.

### CONTEXTUAL ELEMENTS

Business Strategy
Finance
Contract Management
Business Management

### EXAMPLE INDICATORS

Business Strategy

Sharing Knowledge

Identifies, communicates and recommends adoption of best practices and lessons learned utilizing recognized channels. Builds and maintains an external network of peers and knowledge practitioners. Leads cross-business unit improvement.

## Example Organisation 2

C

Power and Process Sector
Major projects
UK marketplace

**Developed an organisation specific competency framework from the APM Framework.**

### FROM APM INDICATOR

TCO5.4
Assesses the probability of achieving times, cost and quality objectives throughout the project.

### TO ORGANISATIONAL INDICATOR

Good knowledge of industry and company risk management processes. Well versed in qualitative assessment methods and how risks are transposed into cost, time and contingency estimates and forecasts.

### FROM APM INDICATORS

TC17.1
Plans the information management system for the project and agrees it with stakeholders, ensuring all of their information needs are met.
TC17.2
Ensures compliance with the organisation's data and information policies and any regulatory requirements.
TC17.3
Implements the project information management and reporting system.

### TO ORGANISATIONAL INDICATOR

In-depth knowledge of all types of project information (deliverables) and its uses. Familiar with all the formal processes in formation management. Knowledgable about the company IM system. Able to produce specific procedures. Understands the needs of information management in the project phases (operational), internal (contractual, statutory) and asset (client) documentation. Able to facilitate the set up of company systems to suit various life phases of projects.

### FROM APM INDICATORS

TC30.1
Formalises the project completion process, hands over operational documents and agrees on a process to resolve open issues.
TC30.4
Obtains appropriate sign-off certificates and agreements on handover of responsibility for all deliverables/products from required stakeholders.
TC30.10
Archives project records.

### TO ORGANISATIONAL INDICATOR

Good knowledge of all handover and close-out activities required for client, company and suppliers. Understands the interfaces with Engineering and As-Build group to facilitate the closure of outstanding issues, issues are recorded, cleared and signed off. Good knowledge of company archiving and close-out requirements, their purpose and value (includes legal requirements). Able to negotiate appropriate close-out terms with all key stakeholders.

# 6. Development and Learning Interventions

This section reviews a variety of ways of developing the project management competencies contained in competency frameworks through learning. Both conventional (e.g. academic and training programmes, and work-based approaches) and non-conventional (e.g. strength-based) approaches are highlighted and discussed in order to propose a framework for designing, selecting and implementing appropriate interventions.

**Proposed Framework for Designing and Implementing Interventions**

The implementation of development and learning interventions requires mapping specific interventions onto competency frameworks and respective role outcomes. Existing project management competency frameworks can be adapted by mapping strengths or weaknesses against competencies, which provides another level of granularity to the competency framework, as illustrated in Figure 1.
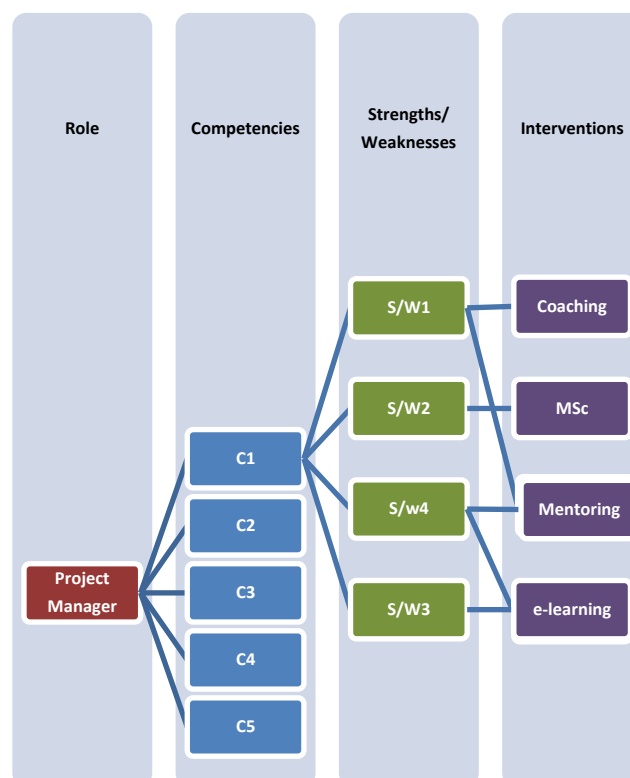


*Figure 1: Mapping strengths or weaknesses to competencies, project management role and interventions*

**Development Strategies**

*Academic and Training Programmes*

**Academic Programmes**

Academic programmes (usually postgraduate programmes) offered in various higher education institutions are common intervention for developing project management competencies. These programmes can be undertaken as full-time (lasting about twelve months) or part-time (lasting about twenty-four months) training.

While generic academic project-management training courses are useful, they do not tell project managers anything about "how we run projects here". The training they provide is more concerned with developing the individual and therefore is person-centred, while the educational activities tend to be broad-based and the content more conceptual, aiming to develop analytical and critical faculties of individuals. Consequently, some studies have shown that the contribution of academic programmes to the competency of project managers is lower than that obtained from formal industry training or on the job experience, due to their broad nature and non-specific nature to any project management job situation. Tailored, organisation-specific training however helps tune academic knowledge and generates consensus that helps to deliver successful projects on an on-going basis.

**Training Programmes**

Training is a practical and job-related or job-centred mode of learning about work methods and established procedures within organisations and thereby develop core competencies. Training can take the form of formal in-house learning activities or external courses and can last from a couple of hours to several days or weeks. Training courses target a range of individual competences in project management and can include the acquisition of technical competencies e.g. Gantt charts, project structure, human and technical resource management, quality control, etc.

**e-learning / Remote Learning**

e-learning and remote learning approaches are becoming popular as a result of improved telecommunications, personal motivation to update skills and cost reduction pressures that organisations increasingly face. With projects spread across several locations and project time and deadlines becoming ever tighter, it is not always possible to get all project managers in one room for a face-to-face training session. Learning tools that facilitate e-learning or remote learning in any place and at any time include: webconferencing, text based forums, video and audio clips, smart phones, webex, games and social-learning tools.

### *Work-based Learning Interventions*

Work-based interventions include all experiential learning approaches to developing competencies and focuses on learning by experiencing and doing as well as reflecting on practice. Experiential learning has a rich history dating to the days of Confucius who noted that "If I am told, I forget; If I am shown I remember; If I do, I understand..." while Aristotle also pointed out that "For the things we have to learn before we can do them, we learn by doing them." Experiential learning approaches are therefore more analytical and require observation and in depth reflection to gain relevant knowledge often implicitly adopting the iterative learning cycles of Kolb (1984). The learning cycle suggest four stages to experiential learning, 'Do' or 'Concrete experience', 'Review' or 'Reflection observation', 'Theory', 'Plan'. 'Do' refers to the fact that one can simply not read or write but must actually do tasks. In project management that would mean that project managers go and learn in real live projects rather than read about them. The second stage is 'Review' or 'Reflection observation'. This means taking time out from doing the activity to review what has been done or experienced. This could be feedback, quiet thinking and lesson learned from project or activity. The third component is 'Theory' which implies that the individual tries to make sense of what they learned and tries to adopt a theoretical concept to support their newly acquired knowledge. As result the individual will have the ability to identifying similar scenarios and their relationship to past experience in different project contexts. 'Plan' is the final step and includes planning to put what is learned into practice.

Building on Kolb's learning cycle, we can also draw on the notion of Schön's (1983) "reflective practitioner" for project management development. Schön stressed in particular the role of reflection which takes professional development beyond the acquisition and possession of technical knowledge and focuses on the practical application of explicit and implicit theories and principles. Project managers can advance their project management practice through reflection on and evaluation of the effectiveness of their actions and behaviours, followed by adjusting plans for new action in a continual cycle of improvement (not dissimilar to the underlying processes of, for instance, Total Quality Management). This process allows project managers to develop adaptive and self-generating capabilities of the kind that are increasingly needed to manage the complexity of projects. A similar process is offered through action learning, which is based on peer groups working together on their day-to-day job experiences and interactions in a cycle of jointly reviewing, questioning, reflecting and planning.

Examples of work-based interventions that incorporate elements of Kolb's cycle and Schön's concept of the "reflective practitioner" in promoting experiential learning include mentoring, coaching and job shadowing.

**Mentoring**

Mentoring is a one-to-one discussion-based mode of enhancing an individual's skills, knowledge or work performance. It is a partnership relationship between two people (mentor and mentee) normally working in a similar field or sharing similar experiences. Mutual trust and respect is therefore fundamental to the success of mentoring. The mentor creates an environment and provides opportunities for the mentee to periodically reflect on career progress and boost confidence in the performance. Mentoring enables the mentee to become more self-aware so that the mentee can take responsibility and direct their career in a more controlled manner. Mentoring is therefore most effective when the mentor is not the line manager of the individual being mentored, as the line association has the undeniable pressure of immediate results. Mentoring is particularly useful in developing the competencies of less-experienced project managers.

**Coaching**

Coaching is similar to mentoring and comprises a practical, goal-focused form of personal, one-on-one learning. It can take different forms, targeting different constituents with varied outcomes, such as 'executive coaching', 'performance coaching', 'life coaching' or 'personal coaching' programmes. Coaching is particularly useful in developing different work competencies such as, problem solving, group work and planning. Coaching is most useful in developing competencies of less-experienced project managers.

**Job Shadowing**

Job shadowing is a work experience approach to learning where competencies can be developed by walking through the work day as a shadow to a competent project manager. It is often temporary and enables first-hand exposure to the work environment increasing career awareness and helps the participant link theory to practice. Job shadowing, however, has limitations as it only enables observation of direct work experience, responsibility and skills are hardly acquired.

While experiential learning has been shown to have a dominant role in maintaining competency, and specific work-based interventions exist to promote learning through experience as discussed above, resource pressures have often resulted in organisations focusing intervention programmes on the development of hard or technical skills, expecting the soft or management skills to be acquired through informal on the job experience. Over-reliance on experience for maintaining the competency of project managers can also lead to project managers missing on the broader outlook as most of the experience they acquire will be job or project specific.

### *Strength Based Strategies*

Whereas conventional and well established training and development practices as outlined above often seek to identify and remedy the skill gaps relating to a role or job function, a strength based strategy focuses on *"what is right, what is working and what is strong"*[12].

There is growing empirical evidence that organisations and individuals can gain more from harnessing strengths than from improving areas of weakness[13].  For instance, Garcea[14] quotes substantial improvements in performance and employee engagement rates and significant reduction in employee turnover. A large-scale study into performance management in the US found that an emphasis on performance and personality strengths has the potential to improve employee performance by up to 36%, whereas a focus on performance and personality weakness may actually *reduce* performance by up to 26%[15].

A strength based approach does not however ignore weaknesses; but it does not seek to "fix" them.  If a person's weaknesses are found to be critical to a role, interventions may range from; changing the role, changing the role incumbent or supporting the development of the person through building on existing and possibly unrealised strengths in order to mitigate the impact of a particular weakness.

How can we use a strength based approach in the development of project managers?

- Firstly, an analysis of the project management role will reveal the qualities needed for excellent performance in a given organisation. These qualities can then be mapped to competencies in any existing project management competency framework.

- Secondly, individual strengths need to be identified through, for instance, self assessment, interviewing, coaching or performance reviews/interviews by skilled managers or consultants.  A straight forward way of identifying strengths is through psychometric assessment[16].

- Thirdly, a comparison between the role requirements in terms of qualities and a particular individual's strengths and strength potential (as well as weaknesses) will reveal areas for development.

- Effective development interventions include the use of assessment tools, coaching, mentoring, team coaching, action learning and reflective practice as discussed above.

## Development of Interventions

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[12]Linley, 2008, p. 5; [13]Biswas-Diener & Dean, 2007; [14]Garcea, 2011; [15]CLC, 2002, cited in Linley & Carter, 2007, p.33;
[16] In line with the ethos of positive psychology some inexpensive tools are publicly available online (e.g., the American VIA character strength assessment tool or the British Realise2 strengths assessment and development tool have both been developed in association with academic institutions and are scientifically well validated and reliable tools).

How the interventions are employed depends on whether a conventional development approach is taken (i.e. fixing weaknesses) or a strength based approach is taken (i.e. building on strengths). Under the strength based approach, mitigation aspect is only important where weaknesses are critical to the role. If they are not critical, then the focus would be on creating "work-arounds". As Figure 1 also suggests, more than one intervention can be employed to fix a weakness or to build a strength. The identification and mapping of interventions against competencies and weaknesses/strengths for a role also needs to take organisational resources and strategy into account. In other words, not every organisation will have the resources or find the same composition of interventions suitable for a particular role or competence. This mapping process as described above can be embedded within a framework such as the EUSCCCIP (Euro-project for the Use of Standards of Competence in CPD for Construction Industry Practitioners) Framework for CPD systems as shown in Figure 2 below. The EUSCCCIP Framework can aid the kind of targeted personal development suggested above where specific competencies are analysed and mapped onto specific weaknesses or strengths and subsequently onto interventions that have the potential to be effective in developing such interventions. The framework guides activities such as identifying needs (i.e. competencies, strengths and weaknesses), selecting appropriate learning opportunities (i.e. interventions), planning and implementing, assessment, reviewing experience, revising goals, evaluating, becoming better at personal development and managing development and learning.
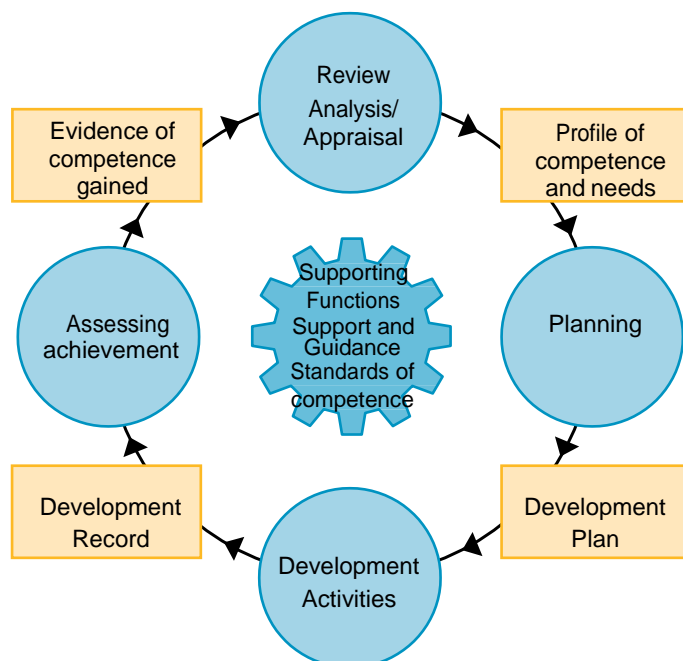


*Figure 2: EUSCCCIP Framework[17]*

[17] CIC, 2011

Once the process of managing the development has been considered, methods such as the ADDIE[18] model of instructional systems design (Analyse, Design, Develop, Implement, Evaluate) can aid in the systematic design and management of specific interventions.

**Analyse:**          **Determine project management development needs**

**Design:**           **Determine the learning objectives required of the intervention(s)**

**Develop:**          **Determine the appropriate means of achieving those objectives**

**Implement:**        **Manage and deliver the intervention(s)**

**Evaluate:**         **Review and evaluate the effectiveness of the intervention(s) and develop an action plan for the lessons learned**

Finally, project management development is more likely to be effective where it is supported by a development *programme* (i.e. a combination of different development interventions over a period of time) than on one particular strategy or a one-off training intervention.

## Evaluation of Interventions

Evaluation of development and learning interventions is essential to inform future training plans and strategy. As a result a wealth of information on this subject is widely available including a variety of evaluation models. As an example, the most widely used of these is considered to be Kirkpatrick's[19] four-level model:

1.    Reaction - what the learner thought and felt about the training

2.    Learning - the resulting increase in knowledge or capability

3.    Behaviour - extent of behaviour and capability improvement and implementation / application

4.    Results - the effects on the organisation from the learner's performance

Methods to evaluate reaction, learning and behaviour are now fairly well established.

Although there are also means in place to evaluate results (the effect on the organisation) using KPIs such sales, timescales, complaints, staff turnover, ratings etc. there appears to be no recognised methods of quantifying the financial value that an employee adds as a result of the training. In other words there are no recognised methods to measure the ROI (return on investment) from training.

[18] Molenda, 2003; [19] Kirkpatrick and Kirkpatrick, 2006

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# Appendix A

**Introductory Questions**

- Which sector of industry does your organisation carry out its main business?

- What is the size of your organisation and how is it structured?

- What are your main roles and responsibilities within your organisation?

- What are the typical types and size of the projects undertaken by your organisation with regards to time, value and complexity?

**Competency Frameworks**

*Questions for both organisations with and without a competence framework*

- In your opinion, what core competencies do you feel are the most important for project manager's to be successful?

- Are there any project management competencies lacking focus within your organisation's employee development methods?

- Are there any competencies within your organisation's project management framework that you think are not as important to become a successful project manager?

- Are there any barriers that hinder the use of competency frameworks within your organisation?

*Questions for organisations with a competence framework only*

- What role do competency frameworks for project management play in your organisation and why?

- How was your project management competency framework developed?

- When was the competency framework developed and who was involved in this process?

- How does your organisation identify the competencies that you wish your project managers to develop?

*Questions for organisations without a competence framework only*

- Do you think there are realistic improvements to be achieved through implementation of a competency framework within your organisation?

**Recruitment**

- Are there certain technical competencies you look for in a person before they are recruited as a Project Manager?

- Are there certain behavioural competencies you look for in a person before they are recruited as a Project Manager?

- Are there certain contextual competencies you look for in a person before they are recruited as a Project Manager?

- Could you please describe a typical career path that a project manager may take within your organisation?

- At each level in the career path, what qualifications and how much experience is required when recruiting Project Managers?

- How long does it currently take on average for your employees to reach the next level within their career path?

**Development**

- What training and development does your organisation currently offer to project managers?

- If any, do you utilise in house or external training? Which type of training is used to develop which competencies?

- Have you heard of the ACTIVE principles and if so how do they fit into your current method of training project managers?

- Are certain project management competencies developed through experience rather than specific training courses?  If so how do you identify whether to develop certain competencies through experience or training?

- Do you evaluate the success of both in house and external training? If so, how?

- Do you evaluate the success of developing competencies through experience? If so, how?

- Are there any other methods that your organisation utilises to develop the careers of your project managers? e.g. shadowing

- Are any procedures in place to decide how much and what training each individual project manager requires?

**Selection and Promotion**

- At what stage are project managers recognised as competent enough to be put in charge of your major projects?

- Do you utilise different employees during different phases of the project life cycle because of the skill sets they posses?

- Do you believe there is a core set of competencies that a project manager can utilise that would sufficiently guide a project manager through the whole project life cycle?

**Additional**

- Is there anything else you would like to add that you feel is relevant to the topic of project manager development?