



project management competency

An overview of the Knapp and Moore
Project Management Competency Framework

knapp&moore

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PART I

Part I – Introduction & Overview

Introduction & Overview

Introduction

This document provides an overview of the Knapp and Moore Project Management Competency Framework, a detailed methodology which is suitable for use by any organisation which runs projects in determining and developing the competency of individuals carrying out a project management role, thus enabling the organisation to baseline current competency, set competency targets and conduct professional development programs which will lead to more competent project management professionals – and better project outcomes.

The complete Framework, which includes the detailed specification of all competencies, plus tools for measuring an individual's competency and managing their professional development in project management competency are available on request from Knapp and Moore.

A Project Management Competency Framework

A Project Management Competency Framework (PMCF) is a set of processes designed to define, measure, deliver and improve project management competency.

Typically, a PMCF is made up of:

1. A set of processes to be undertaken which will result in achieving target competency levels.
2. The competency standards which describe both the required knowledge and expected job behaviours of a project manager.
3. A set of job role profiles, (Project Manager, Senior Project Manager, Project Director) being described in terms of the competency profiles necessary to effectively carry out those roles.
4. A mechanism whereby an individual can have their competencies assessed as defined by what they know and what they can do – that is, their behavioural profile.
5. The PMCF will identify how an individual can embark on a Professional Development Program designed to improve their competencies to meet target levels.
6. The PMCF will be self-correcting, in that there will be review mechanisms built-in such that the effectiveness of the model is being continually assessed and, on a regular basis, improvements are applied.

A key attribute of the Framework is its flexibility: the model can be modified to meet the changing needs of the organisation.

Project Manager Competence

There are a number of definitions of competence which all revolve around demonstrated results from specified activities: that is, competence defines the delivery of an expected outcome through an individual's particular knowledge and skills. The Project Management Institute (PMI) uses a standard definition of competence:

"A cluster of related knowledge, attitudes, skills and other personal characteristics that affects a major part of one's job (i.e. one or more key roles or responsibilities); that correlates with performance on the job; that can be measured against well-accepted standards; and that can be improved via training and development."

Paraphrased, the definition states that competence are those attributes – learned and inherent – which describe how a project manager should perform on the job. In essence, the factors which enable competence to be defined and a project manager's competency to be measured are identified in the following model:

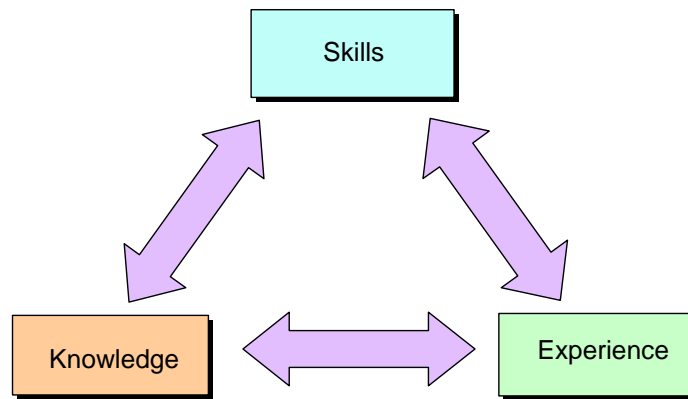


Figure 1: Relationship between the 3 key attributes which define competence

What this model demonstrates is that competence is a combination of what we know, what we can do (skills which are inherent or learned) and our experience acting as a guide. Another way of viewing this is:

- ✓ *Knowledge removes doubt and gives clarity*
- ✓ *Skills increase the occurrence of prescribed outcomes*
- ✓ *Experience brings wisdom*

Interestingly, all three attributes of competence can be measured which is what is required to assess an individual's competence. Of equal importance is the observation that the absence (or perceived weakness) in any of the 3 attributes fundamentally undermines claimed competence in that failure of the prescribed task (indeed, project) is increased. The application of the above model to a specific area of behaviour (in this case project management) enables the derivation of a Project Management Competency Framework.

Competence and Success

Whereas competent project managers are critical to project success, they are not the only integral factor. There are 4 pillars of project success, as shown below:

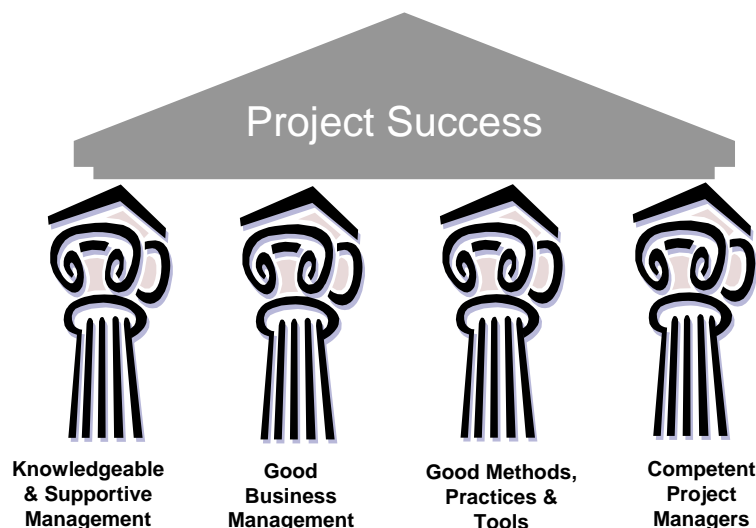


Figure 2: The 4 pillars which govern project outcomes

The following table describes each of these pillars and its role in delivering successful projects:

Factor for Success	Description
<i>Knowledgeable and Supportive Management</i>	<p>Senior management involved in projects, project sponsors, Project Review Board members and key stakeholders should all:</p> <ul style="list-style-type: none"> ⇒ Be aware of, and commit to, their accountabilities to the project. ⇒ Ensure adequate and appropriate resources are assigned to the project. ⇒ Ensure issues are resolved and decision-making occurs. ⇒ Be aware of project dynamics and how the project will behave.
<i>Good Project Management Practices</i>	<p>Project Management methods:</p> <ul style="list-style-type: none"> ⇒ Need to be appropriate for the size and complexity of the project: a 'fitness for purpose' model. ⇒ Need to be standardised. Practice and terminology across all projects need to be consistent so all involved speak the same language. ⇒ Clearly deliver benefits and add to project success.
<i>Good Project Methods</i>	<p>The project team must have know-how. There is little chance for meeting expectations and time and cost constraints if a 'suck it and see' approach is taken. Where there is little or inadequate experience, then know-how should be brought in to the project.</p>
<i>Skilled project managers</i>	<p>It appears that organisations that treat project management as a specific skill-set, with its own career development path and professionalism, increase project success. As intuitively obvious as this may be, existing inertia within organisations often sees a move towards professional project management resisted.</p>

The point is obvious: focus just on growing better project managers and the organisation runs the danger of still not delivering more effective projects. Indeed, knowledgeable and committed senior project stakeholders are more critical to project success than any other factor.

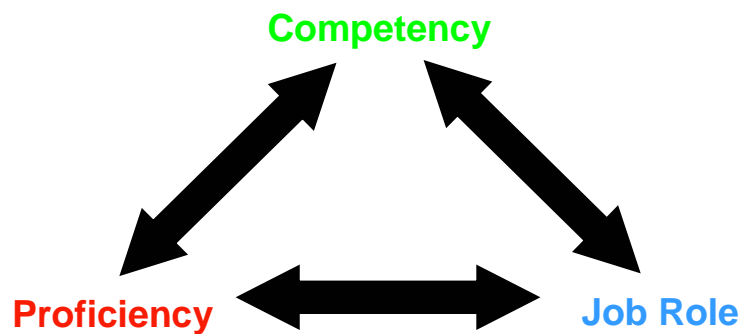
Overview of the PM Competency Framework

There are a number standards in defining project management competencies¹ currently in use around the world. In summary, the 3 major sets of standards are:

1. The Australian National Competency Standards in Project Management (ANCSPM), published under the auspices of the Australian Qualification Framework and used by the Australian Institute of Project Management (AIPM) as the basis for its certification program.
2. The International Project Management Association (IPMA) standards in project management competency.
3. The Project Management Institute's (PMI) Project Management Competency Development Framework (PMCDF), recently published.

Each competency framework should define competency in terms of 3 key dimensions:

1. The specific **competency** being defined
2. The **job role** the competency is associated with
3. The **proficiency**, or level, at which the competency is executed



None of the three frameworks identified above define all three dimensions in the same model. The ANCSPM model defines Competency assigned to Job Roles, as shown in the following diagram:

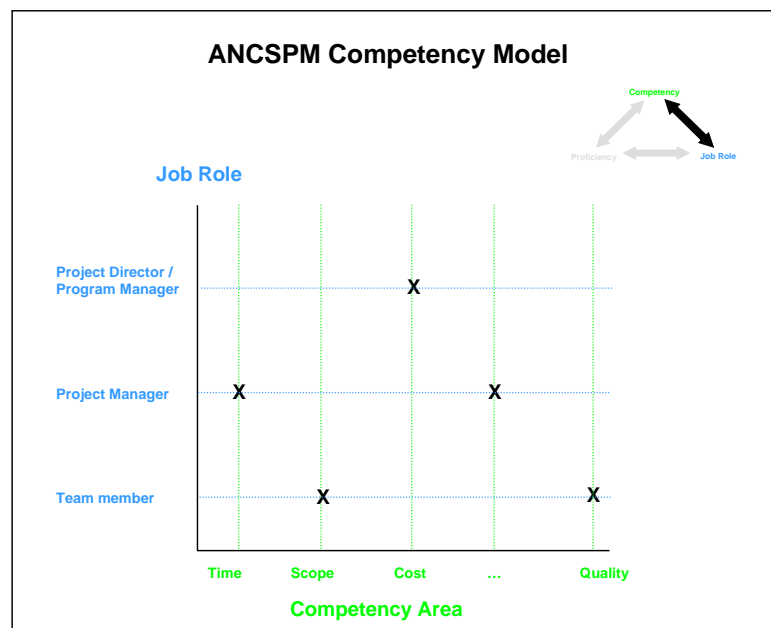


Figure 3: The ANCSPM Competency Framework

¹ For a detailed analysis of the competency models currently available, see Appendix B – Project Management Competency Standards

In this model, there is no allowance for proficiency – either the individual in question successfully fulfills the requirements of the competency, or he or she does not. In the case of the PMI's PMCDF, there is only a single job role (Project Manager), however recognition is given to varying proficiency levels, as shown here:

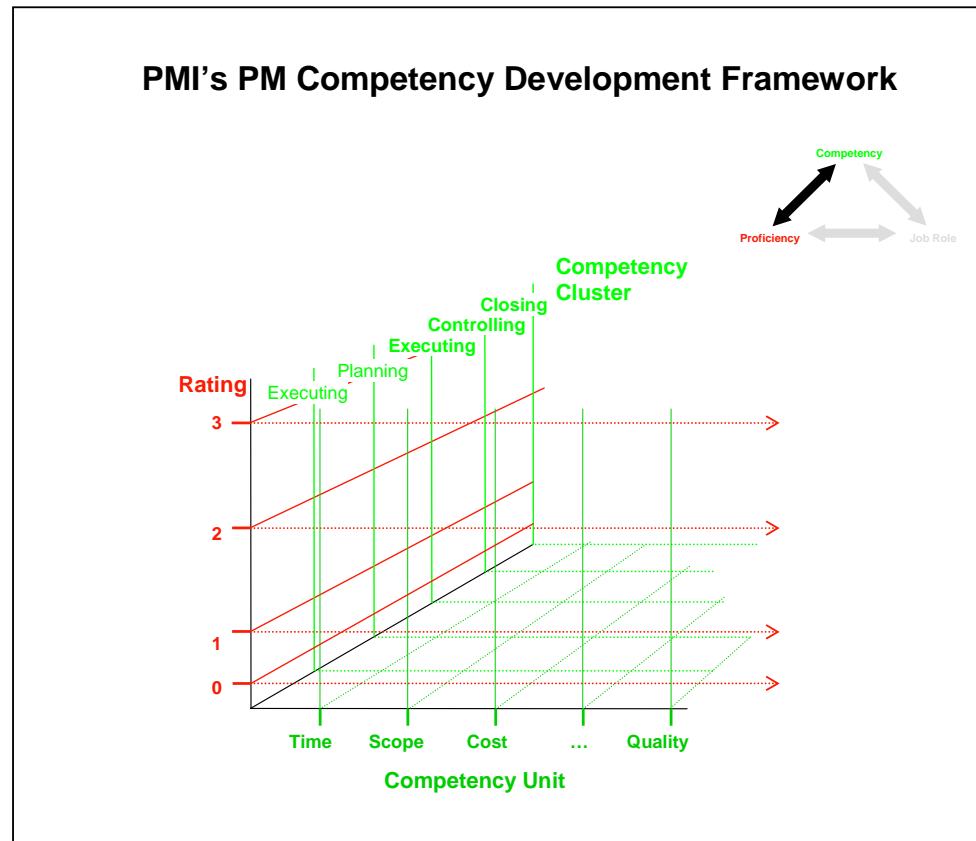


Figure 4: PMI's PM Competency Development Framework

If one were to religiously follow the assessment methodologies as defined in the ANCSMP or PMI's PMCDF then would one be assured of defining 'what makes a good project managers'? The answer is "Probably not" considering the limited nature of the frameworks these models are based on. It is absolutely critical to remember the reasons why competency methodologies exist are to broadly satisfy 2 objectives:

1. For the individual to assess their current performance in determining how he or she may improve and
2. For the organisation to determine how to run more effective, successful projects.

There are many other reasons than simply these 2 (such as improving professionalism, developing excellent staff, retaining the right employees and moving towards formal accreditations), however, at the end of the day both the individual and the organisation as a whole must be clear about 'why we're all going to so much trouble!'. So, with these 2 objectives clearly in mind, it is possible to define a complete competency framework.

A competency framework should:

1. Define the competencies for a particular job role.
2. Define how competency can be both measured and predicted.

3. Define how competency levels and attributes need to be modified to align with organisational and external factors (such as project complexity and environmental risks).
4. Describe how competency gaps can be addressed via training, mentoring or some other professional development strategy.

From first inspection it appears that both the ANCSPM and PMI models are somewhat deficient in defining a complete competency framework, and in an attempt to produce a more complete competency framework, Knapp and Moore developed a Project Management Competency Framework (PMCF) which incorporates all three competency dimensions, as shown below:

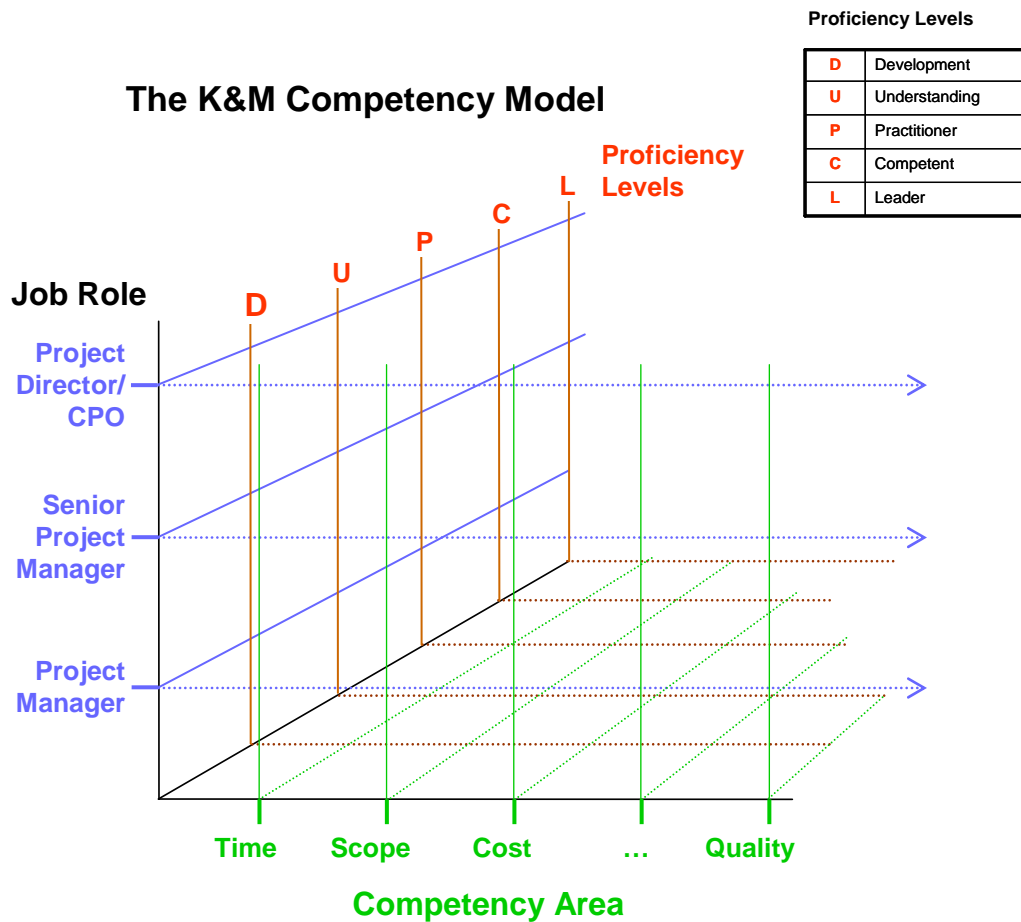
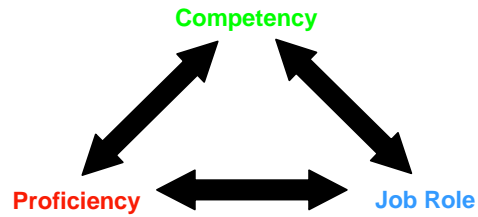
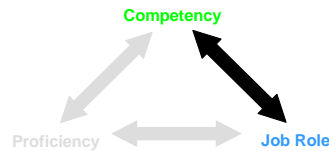
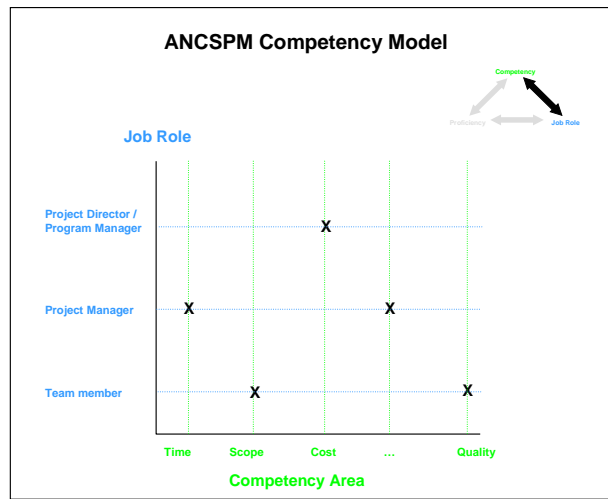


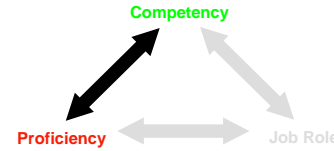
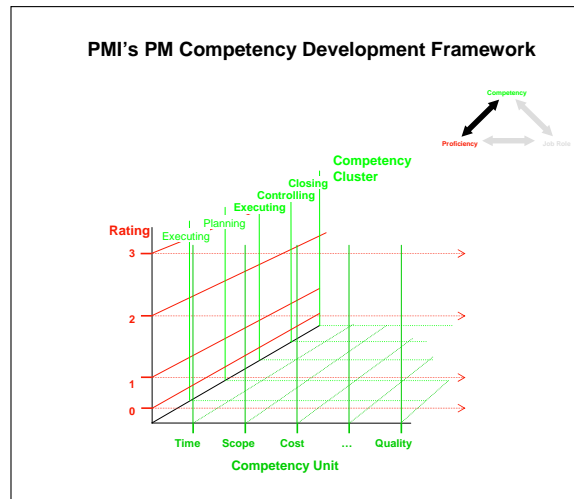
Figure 5: The Knapp and Moore Competency Framework



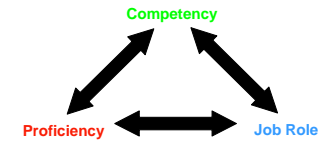
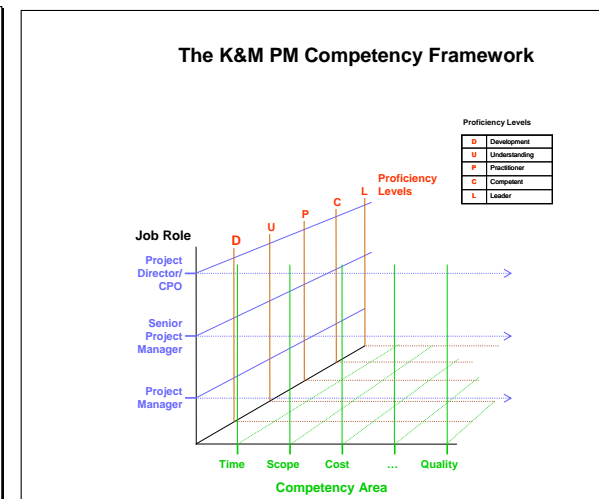
An individual's competency may be described as the totality of what is known, and what is done. These descriptions of competency involve 3 'dimensions': the **Competency** being described, the **Job Role** which requires the competency, and the **Proficiency** level to be demonstrated to be considered competent.



The Australian National Competency Standards for Project Management describe competencies for job roles (levels 4,5 6) but they do not describe the proficiency level appropriate for each competency at the relevant job role level



PMI's Project Management Competency Development Framework defines at a detail level the competencies associated with each project management process and knowledge area along with a proficiency rating, but for just 1 job role (Project Manager)



The Knapp and Moore Project Management Competency Framework combines all 3 dimensions in a single framework.

Figure 6: Comparing 3 PM Competency Frameworks

The Process Model

The specification of a competency framework is of academic interest only without a mechanism to enable the organisation (or the individual program or project) to apply the standards taking into account specific organisational and individual factors, thus ensuring the standards are relevant. Thus there needs to be a set of processes to manage the development of professional project management competency incorporating the standard competency framework. The process model described here ensures that all 4 criteria (as defined above) are satisfied.

The base process model is shown in Figure 7. A positive feedback system loop is incorporated to ensure the model is self-correcting.

The following model identifies the 4 core processes making up the Framework:

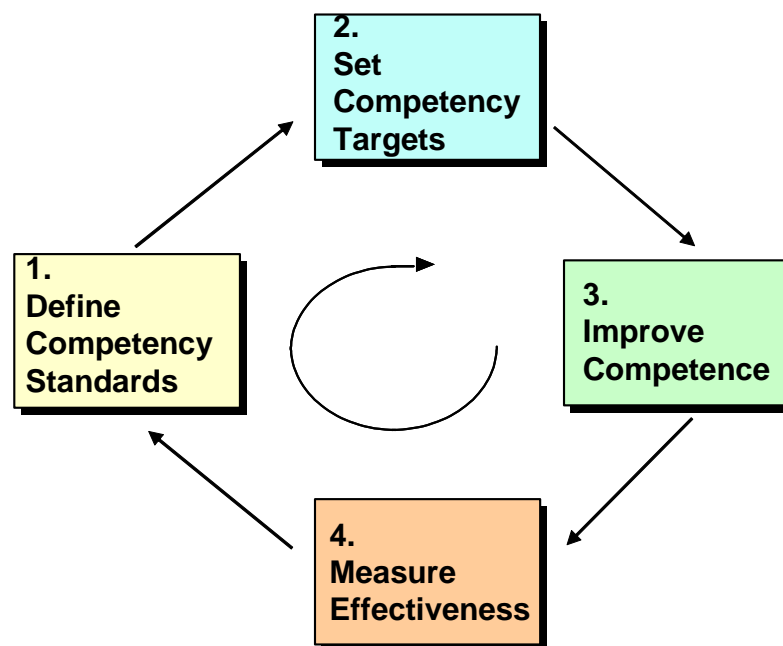


Figure 7: The 4 key processes which make up the PM Competency Framework

The model shows there are 4 broad processes making up the PMCF:

1. Define Competency Standards	The 'standards' here refer to both the competency standards for the individual and the standards which describe organisational maturity and competence.
2. Set Competency Targets	The competency targets refer to the number and skill levels of project managers. All individual project managers (AND others involved in project governance) are assessed against the standards. Similarly, the overall organisation and its component business and functional units are measured with regard to their respective Project Management Maturity ² , and the Project Portfolio is analysed to determine the number, size and complexity of the projects to be undertaken. This step is critical since it is not possible to set competence targets for individuals unless the organisation understands quite clearly what type of projects and programs they will be undertaking.

² See "Maturity Assessment and Improvement", Michael Knapp of Knapp & Moore Pty Limited, Sydney, September 2001

<i>3. Improve competence</i>	Initiatives are undertaken to improve individuals' competence and organisation maturity.
<i>4. Measure Effectiveness</i>	Project outcomes are reviewed and assessment made as to whether the individuals and the organisation as a whole performed such that project objectives and expectations were achieved. Where measured outcomes do not meet expectations then improvements are identified and implemented.

The Process Table

	1. Define Competency Standards	2. Set Competency Targets	3. Improve Competence	4. Measure Effectiveness
Process				
Major Activities	✎ Define / Update Standards	✎ Assess Individual Competence ✎ Determine Competency Baseline ✎ Update PM Roles	✎ Design / update coaching programs ✎ Design / update Learning Programs ✎ Define Professional Development Program (PDP) ✎ Undertake Learning Program ✎ Engage in coaching	✎ Assess performance ✎ Update PDP ✎ Review the PMCF ✎ Update coaching programs ✎ Update Learning Programs
Key Deliverables	📖 PMCF Standards	📖 Assessment Report 📖 PM Competency Baseline	📖 Professional Development Program 📖 Learning Programs	📖 Assessment Report 📖 Professional Development Program
Involvement	👤 Management 👤 Project Professionals 👤 Human Resources	👤 Management 👤 PM Practice Leads 👤 Human Resources	👤 Management 👤 Project Professionals 👤 PM Practice Leads 👤 Human Resources	👤 Management 👤 Project Professionals 👤 PM Practice Leads 👤 Human Resources

Figure 8: A Process Table describing the 4 main processes of the PM Competency Framework

PART II

Part II- The Project Management Competency Framework

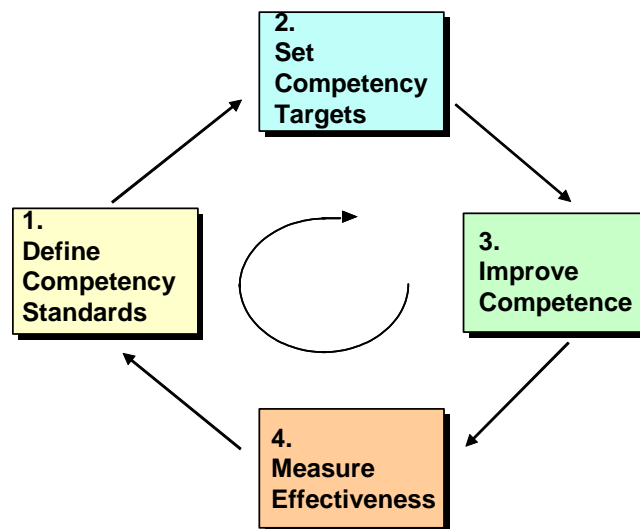
The Project Management Competency Framework

Introduction

The K&M PMCF makes recognition of existing competency frameworks, including the ANCSPM and PMI's Competency Development Framework, but with substantial differences designed to make the Framework specific to job roles. The reason for this is simple: the model will be very effective at developing highly competent project managers and project directors, thus leading to greater project success.

This section of the Handbook expands each of the 4 key processes making up the Framework, describing in detail how the Framework can be applied.

The model introduced in the previous section is as follows:



Each of the 4 processes is described in terms of the process steps, deliverables and involvement.

As discussed above, the most widely used competency standards in Australia are the Australian National Competency Standards for Project Management (ANCSPM) which are endorsed by the Australian Qualification Framework. These standards define performance against the PMI's Knowledge Areas and for 3 levels of performance, broadly aligned with job roles ranging from Project Team Member through to Project Director. These standards are viewed as being inadequate by themselves in being able to meet all the criteria an organisation requires for the standards to be seen as appropriate.

The Competency Standards are characterised by the following criteria:

1. The competency standards are useful for assessing an individual's competency in managing projects or programs, for defining job roles and setting competency targets which can be used for designing and implementing professional development programs.
2. The Standards address not just the technical competencies, but all competencies which describe project management practice. Thus, general management and human competencies are considered.
3. The competencies are defined in terms of what is known (Knowledge) and what is done (Behaviour).
4. The combination of Knowledge and Behaviour (including the individual's experience) defines Competency, which is aligned with standard skill / proficiency levels of D-Development, U-Understands, P-Practitioner, C-Competent and L-Leader.
5. Competencies are related to job tasks (many of which are defined in a Project Management Methodology – if, indeed, such a methodology is in use in the organisation).

6. Competencies are related to job roles and can be graded as being Core, Ancillary or Optional for a given job role.
7. Competencies for a job role can be further refined to align with the requirements of a particular project.
8. Competency standards need to be relevant for the culture and dynamics of the relevant industry, and use industry-standard terminology and, where appropriate, make reference to any existing organisational standards, policies and procedures.

In defining the PMCF, all the above factors have been taken into consideration.

The following sections describe each of the 4 processes in detail.

Process 1: Define Competency Standards

The Process Model

The process model for Processes 1 and 2 is shown in Figure 9.

As can be seen from the diagram, there are 2 process streams, one to define Individual Competencies and the second to define Organisational Competencies, or Maturity. For the purpose of this Handbook, only the Individual Competencies are defined and analysed.

The major activity of Process 1 is 'Set Competency Standards'. To understand how this activity is carried out, it is necessary to understand the competency standards currently in use for project managers.

Competency Standards

The Project Management Competency Standards describe the following:

1. The project management competencies as described by Knowledge and Behaviour.
2. The competency is considered as Core, Ancillary or Optional for the particular project management role.
3. The competency level uses standard skill (or proficiency) levels ranging from Development through to Leader.
4. The project management roles are described in terms of competency and experience (amongst a range of job attributes).

In the ANCSPM model, for each of the Competency Areas which align with the PMI's Knowledge Areas, an individual may be assessed as between levels 4 - 6. As the performance characteristics do not take into account the nature of either the culture of the organisation or the projects being managed, the attained score does not indicate 'goodness' (as in 'John X is a good project manager'). Indeed, someone consistently performing at a level 6 for a particular type of project may work towards project failure rather than project success for a totally different type of project.

The ANCSPM also indicate that it is desirable for an individual to strive to be scored higher on the performance scale, something which may be inappropriate for the nature of the job role. The Knapp and Moore Competency Model allows for a better mapping of performance competencies for the individual by bringing in a 3rd dimension – that of the job role.

The flexibility inherent in this model means that the competency assessment model can also act as the target (job role) competency model. An individual can be set target performance characteristics with varying levels for different knowledge areas which align specifically with the job role they are assigned. Importantly, the target competencies can be varied for the job role, *as well as for a job role on a particular project*. In other words, granularity is achieved for both the individual project manager and the individual project.

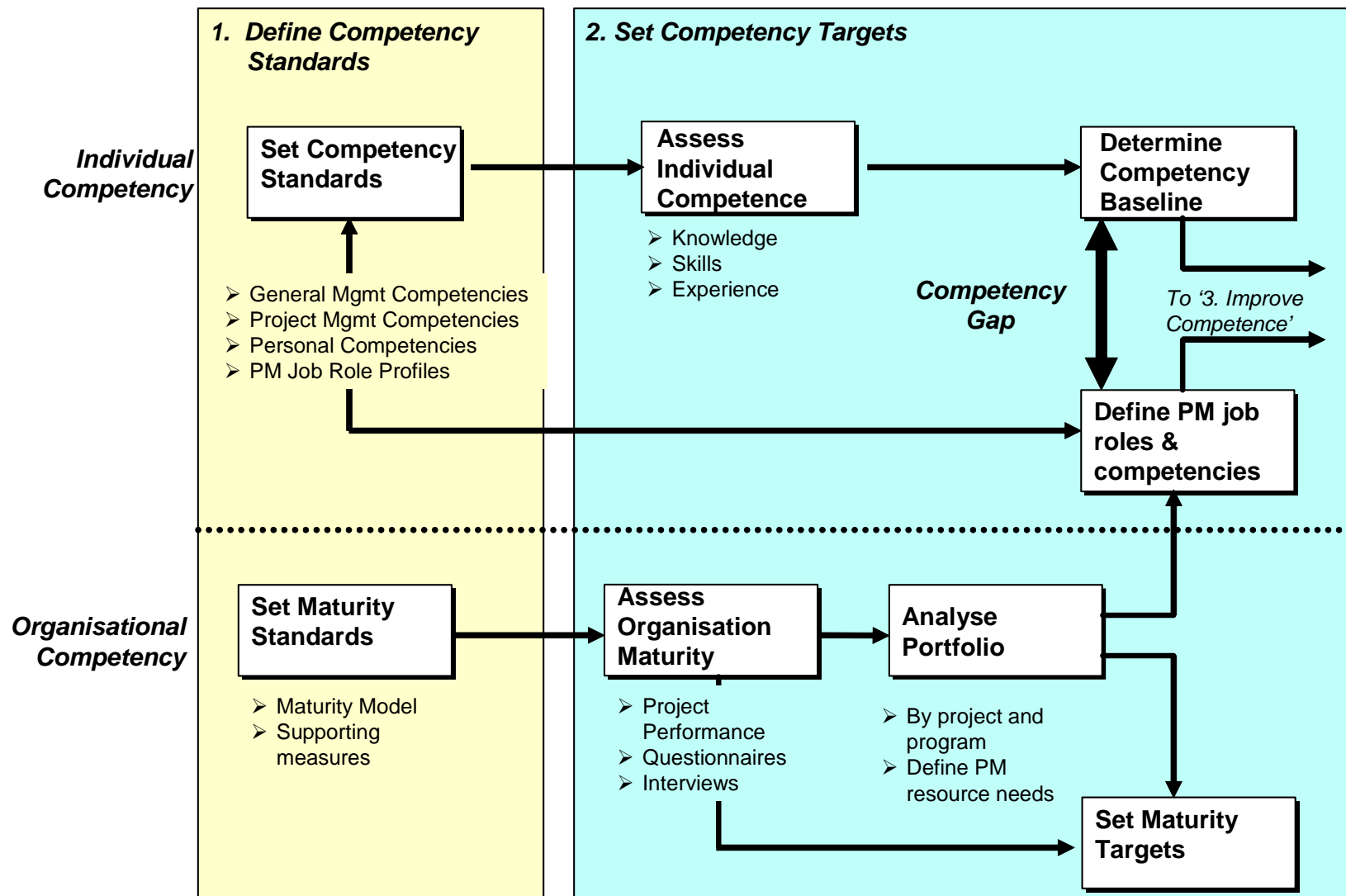


Figure 9: The first 2 processes making up the PMCF shown at the next level of detail

Competency Areas

One deficiency of the ANCSPM is that they describe competencies in very technical terms, specifically, that of the PMBOK Knowledge Areas. The problem with this should be apparent: good project managers are more than just good planners, schedulers and trackers. To their credit, the PMI's PMCF includes a set of Personal Competencies which address the less-technical, more human attributes of management practice. Still, there is room for improvement as shown in the following model:

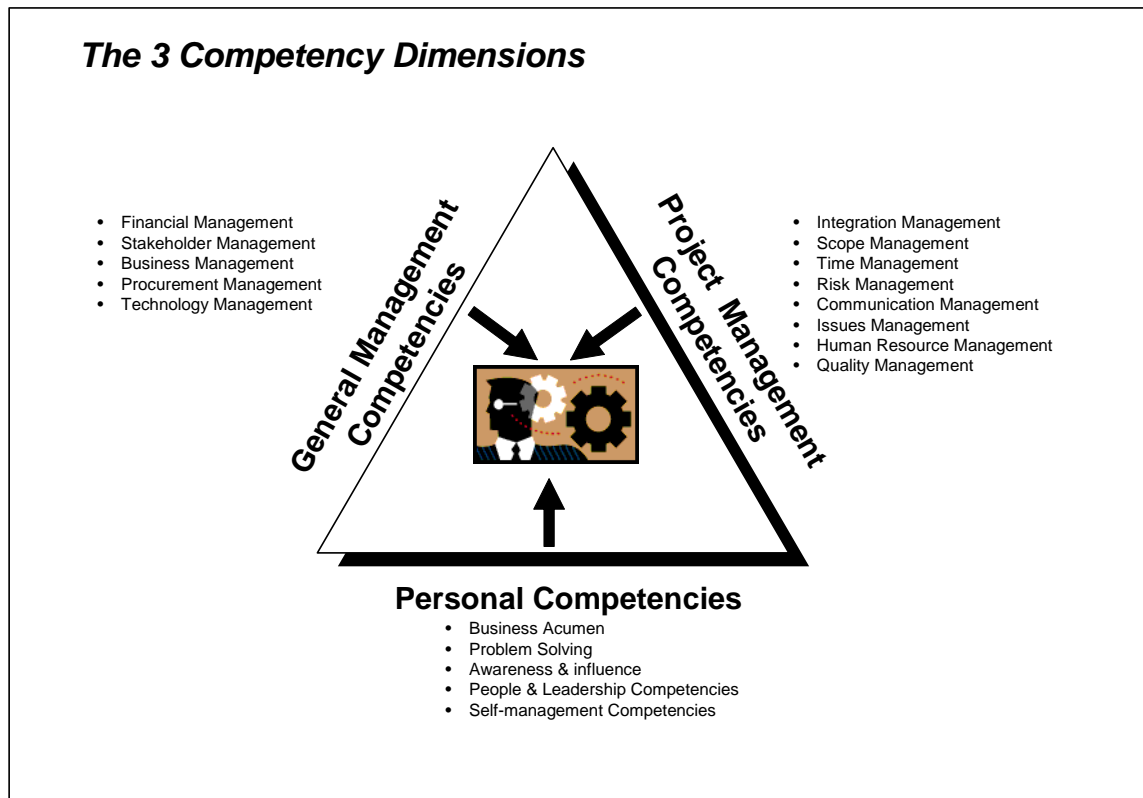


Figure 10: The 3 dimensions describing project management competencies

This model depicts that competencies can be defined across 3 broad areas:

- ♦ General Management competencies
- ♦ Specialist Project Management competencies
- ♦ Personal competencies

The competencies have been developed into individual competencies which are then mapped to knowledge and behaviour characteristics.

There is an implied relationship between the 3 competency areas in that at its foundation, Project Management competency is built on Personal Competencies on which are built General Management Competencies and, at its apex are Project Management Competencies, as shown in the following model:

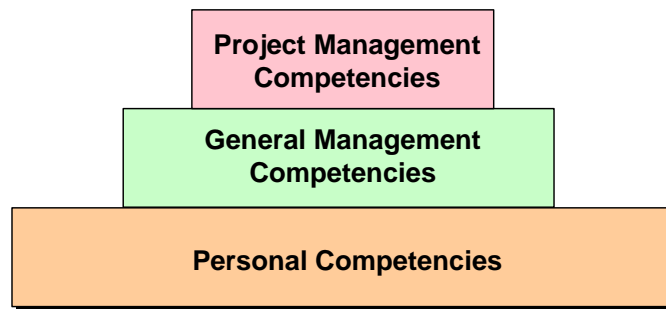


Figure 11: The relationship between the 3 competency dimensions, showing Personal Competencies as the basis on which to develop competencies

One clear implication of the model is that fundamental to the development of the project management competencies are those skills often referred to as 'soft competencies', 'life competencies' or 'human competencies'. Of equal importance is the recognition that, as an individual grows professionally and demonstrates the ability to take on more demanding and higher-level roles, then that growth is reflected across all three competency areas with changing focus and emphasis.

Specific Competencies

The competency model relates a number of key attributes:

- ♦ The 3 Competency Dimensions
- ♦ The Competency Areas making up each of the Competency Dimensions
- ♦ The individual competencies making up each Competency Area
- ♦ The knowledge and behaviour characteristics of the specific competency
- ♦ The relationship between the specific competency and the standard project management job role.

The specific project management competencies are defined as follows:

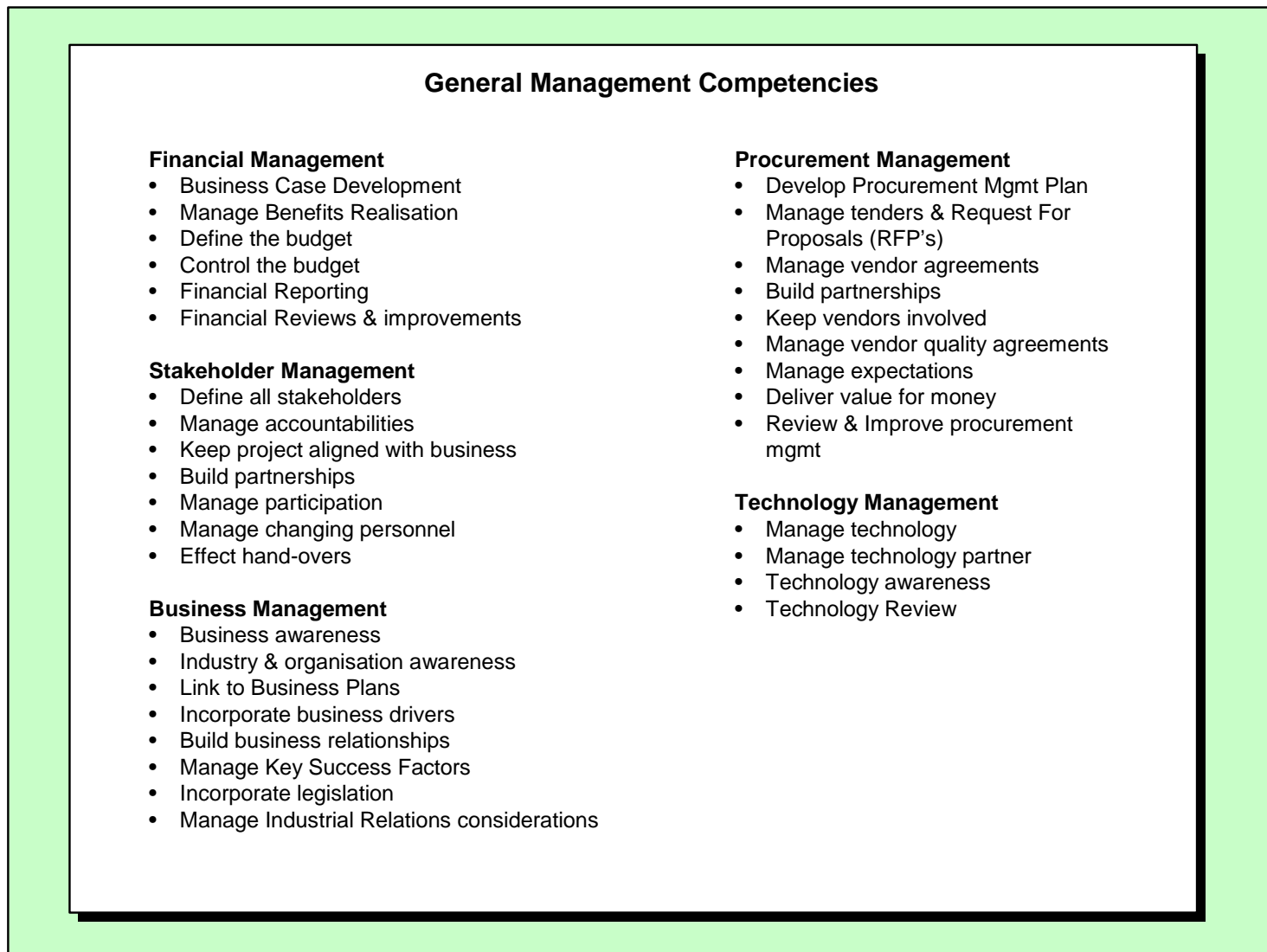


Figure 12: The competencies making up the General Management Competency dimension

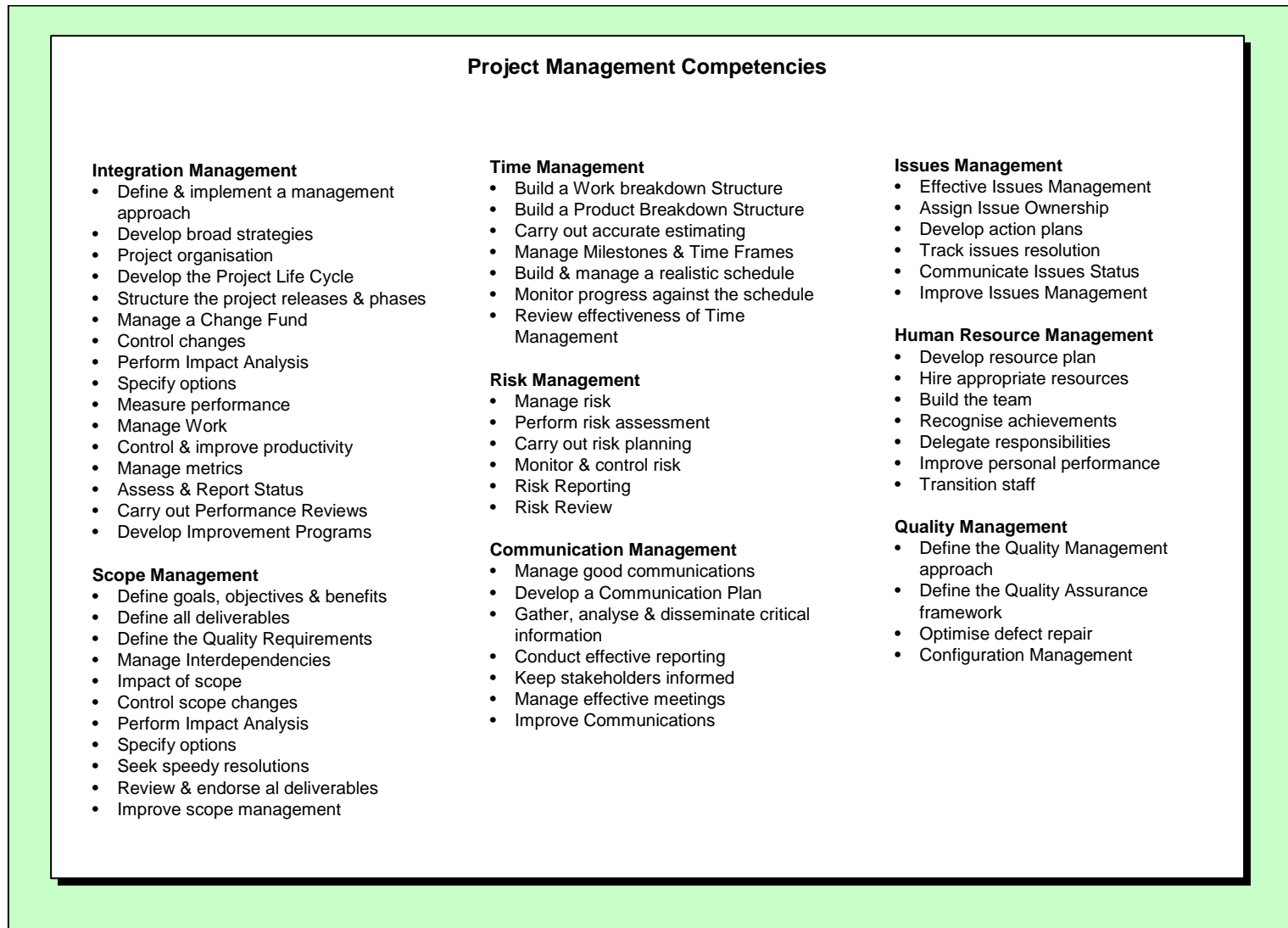


Figure 13: The competencies making up the Project Management Competency dimension

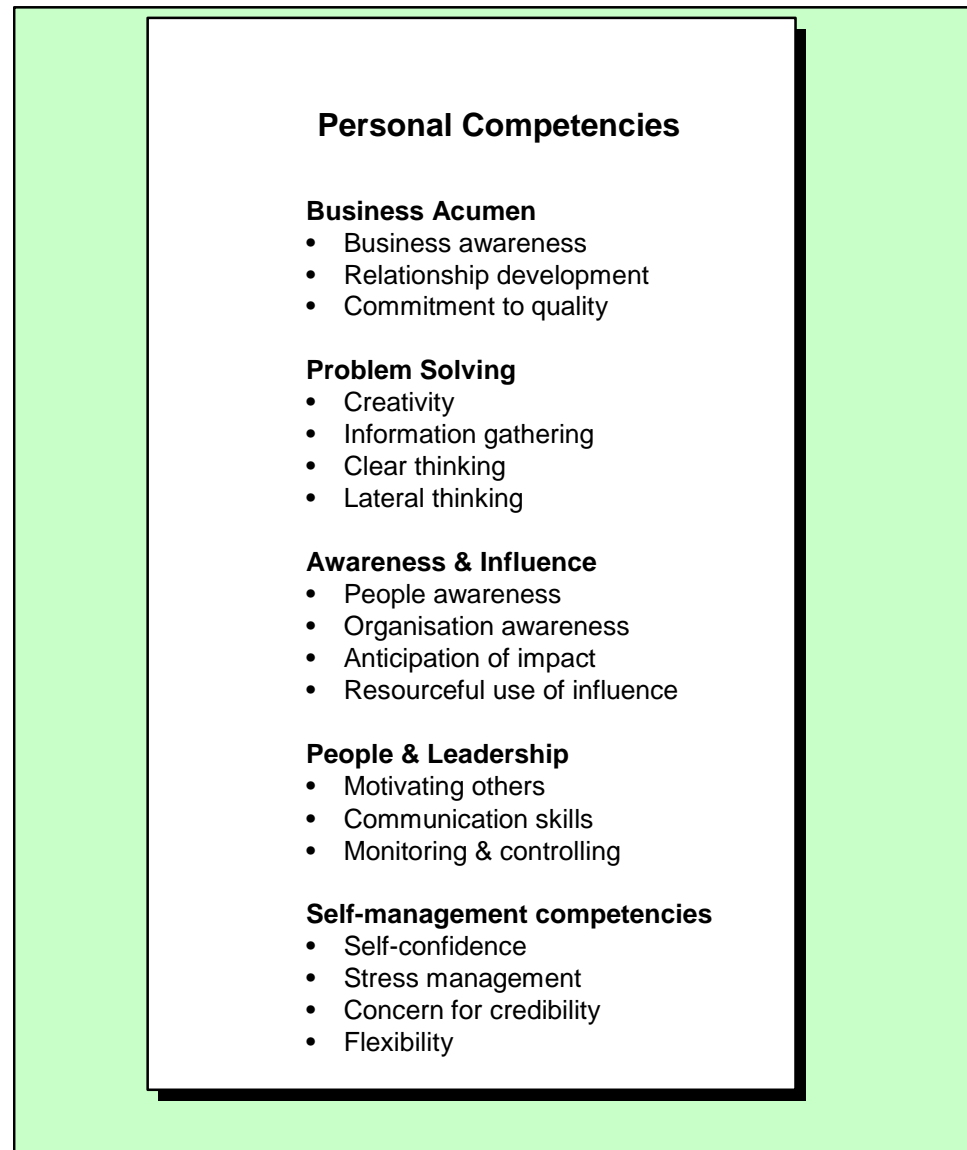


Figure 14: The competencies making up the Leadership & Personal Competency dimension

Each competency is related to a job role as being either Core, Ancillary or Optional as defined in the following table:

Core	Core to the job. The project manager will need to have an adequate level of competency in order to meet the requirements of the job. The competency is mandatory for the project manager to successfully manage the project in more than 75% of cases.
Ancillary	'Normally required for the job'. Without this competency, the project manager may struggle, although success is not necessarily undermined. The competency may be considered mandatory for the project manager depending on the project, but this will be for less than 25% of projects.
Optional	Having or not having this competency may not impact on job performance, although this judgement is dependent on the type of project being undertaken.

Care needs to be exercised when applying the above relationship from competency to job role, as the nature of the project being undertaken has a primary impact on whether the competency is required or not. In this sense, understanding how to categorise projects is quite useful.

An example may serve to illustrate the difference between Core and Ancillary.

Normally, a project manager may regard competency in Procurement Management as ancillary to successfully managing a project. However, the competency may be considered Core depending on the nature of the project. For example, if the project is dependent on a vendor supplying a particular set of specialist training modules for the end users of an application, and the agreement to provide those modules and associated services has not been set up, then the project manager will need to have the specified competencies and competency levels in Procurement Management to successfully manage the project. In this case, the competency would be regarded as Core rather than Ancillary.

Project Categories

Projects can be categorised from simple through to complex via an analysis of 4 attributes:

Complexity	Measures the business and technology complexity of the application, product or business processes being implemented by this project.
Size	As measured by elapsed time, effort months, project budget, number of resources required and number of key stakeholders.
Priority	An indication of the significance of the benefits to be delivered, and which business plan the project is related to. It is also an indication of whether the project is regarded as strategic, tactical or operational.
Risk	A reflection of the size of the uncertainty – or opportunity – associated with this project.

An analysis and scoring of each of the above factors enables a project to be grouped as either a Category 1, 2 or 3 where a Category 1 project is quite simple and a Category 3 project is complex. It makes sense to adopt the principle that project management roles relate to the project category: in other words, Category 1 projects require a less experienced project manager and Category 2 or 3 projects require proportionately more experienced and skilled managers.

The following model illustrates the relationship:

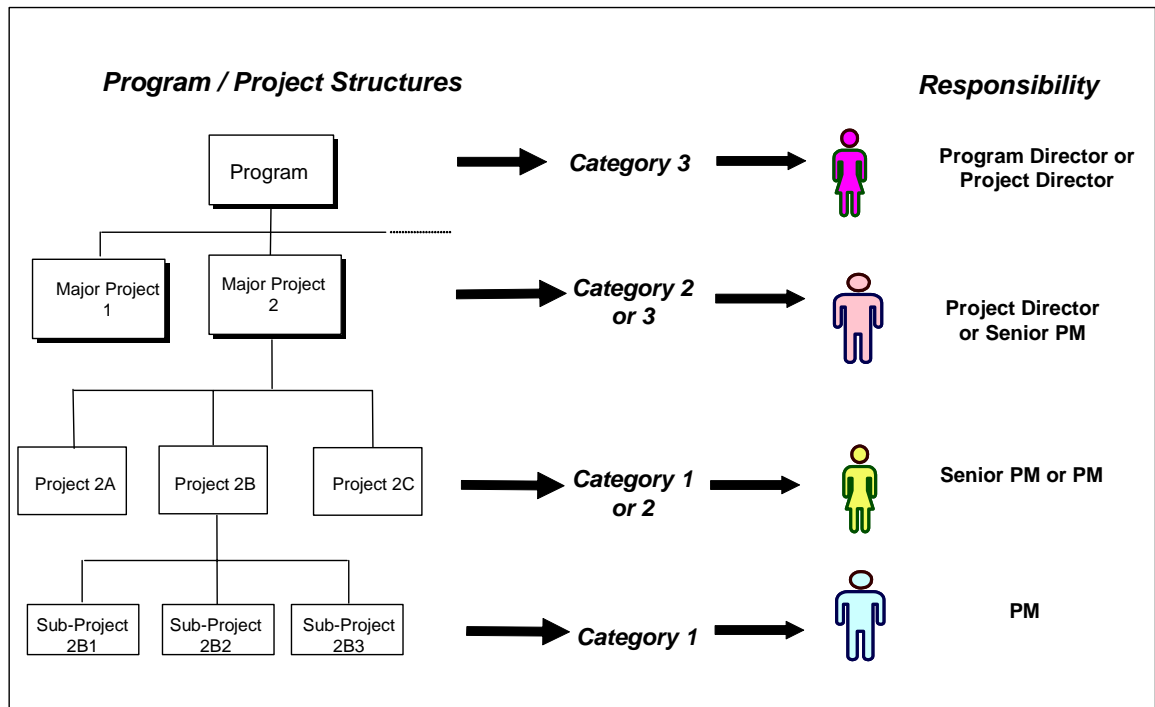


Figure 15: The relationship between program or project type, Category and project manager role

PM Core Competencies By Project Category

It follows that the competencies required to manage a Category 1 project are different to those required to manage a Program or Category 3 project. In general, competencies build on existing competencies, such that by undertaking additional training, education, mentoring and simply by gaining experience an individual gains the competencies necessary to progress from project manager through to senior project manager and so on.

The following model (Figure 16) identifies that, as a project grows in complexity and priority, the project manager shifts focus from one of 'managing in' to 'managing out'.

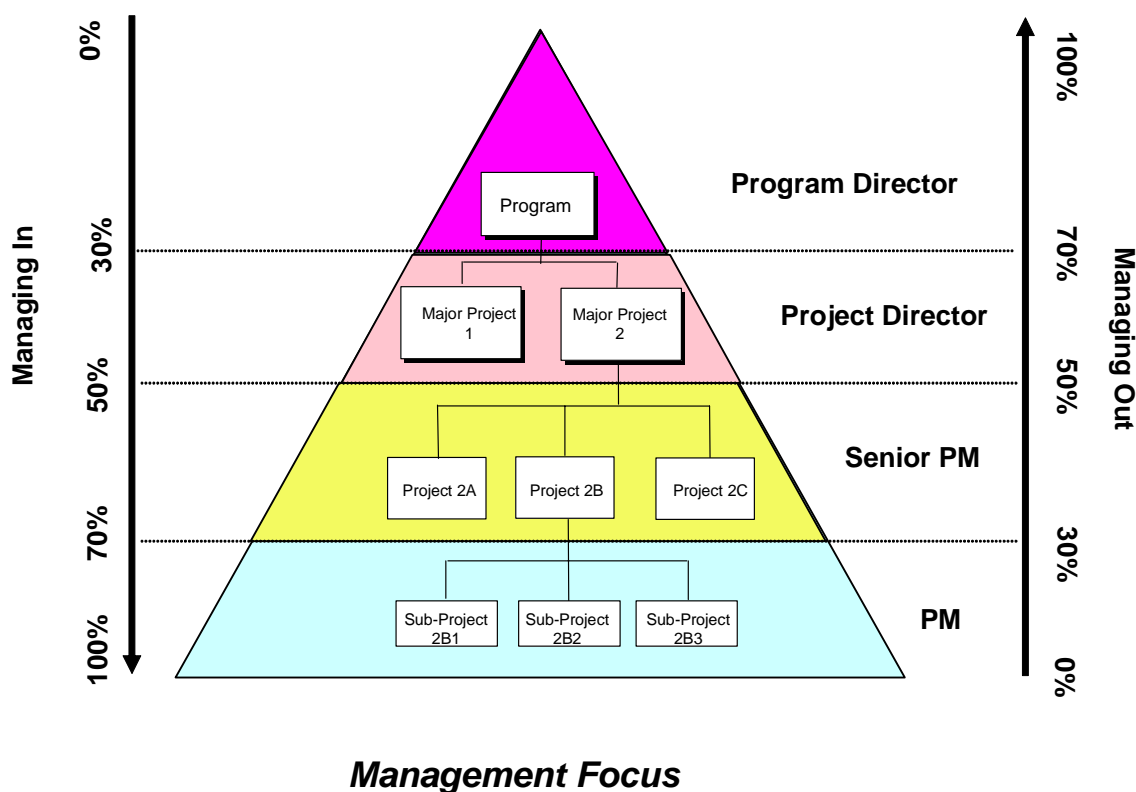


Figure 16: Management focus shifts depending on the type of project being managed

This means that as a project manager running a Category 1 project (that is, relatively small and simple), the competency focus will be on the more technical aspects of managing a project, such as scope control, delivery management, quality and risk. Where a Project Director is running a large, complex and high risk group of projects, then the focus has switched from 'managing in' to those competencies necessary for 'managing out': Knowledge of the business, Stakeholder Management and Vendor and Contract Management. Of course, this analysis cannot be taken as being inflexible and applicable to all projects in all business units: what is important to understand is that the focus of mandatory competencies shifts depending on the type of project. Equally true is that competencies build on each other and are often interdependent. Whereas the focus of a Category 3 project may well be on managing senior management, good risk management practices cannot be ignored.

The following table provides a summary of how competencies shift as the individual project manager moves from managing small projects through large projects and programs. In this sense, the table highlights what is meant by 'managing in' and 'managing out':

Competency Area	'Managing In' Focus	'Managing Out' Focus
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Competency Area	'Managing In' Focus	'Managing Out' Focus
General Management Competencies		
Financial Management	<ul style="list-style-type: none"> ▪ Cost control; ▪ Setting budgets at a detailed level; ▪ Understanding the major priorities / benefits; ▪ Good awareness of the Project Justification and Business Case. 	<ul style="list-style-type: none"> ▪ Negotiating a realistic budget; ▪ Forward projections and using Earned Value Assessment (EVA); ▪ Clear understanding of project bottom line; ▪ Relationship of benefits statement to business plans.
Stakeholder Management	<ul style="list-style-type: none"> ▪ Working with team members and representatives from involved groups, such as business units and functional units; ▪ Developing and managing written agreements with individuals involved with the project. 	<ul style="list-style-type: none"> ▪ Negotiating the right level of involvement with internal and external groups; ▪ Working closely with senior management to ensure continued buy-in; ▪ Formalising stakeholder agreements with clearly defined accountabilities.
Business Management	<ul style="list-style-type: none"> ▪ Good awareness of both the organisation's business and the broader industry trends; ▪ Involvement in at least 1 Financial Services industry forum; ▪ Specific knowledge regarding the project business area. 	<ul style="list-style-type: none"> ▪ Very good understanding of the industry, trends, risks and opportunities; ▪ Detailed knowledge of the organisation's strategic and business plans; ▪ Involvement, at a senior level, in industry fora.
Procurement Management	<ul style="list-style-type: none"> ▪ Understanding of good vendor and contract management practices; ▪ Detailed knowledge of specific vendor Service Level Agreements (SLA's), but little involvement in negotiating contracts etc. ▪ Good working knowledge of managing relationship with IT. 	<ul style="list-style-type: none"> ▪ Strong negotiating skills in setting up contracts and formal agreements; ▪ Management of contracts at a 'heads of agreement' level; ▪ Will often represent the business in negotiating major agreements with vendors.
Technology Management	<ul style="list-style-type: none"> ▪ Very good understanding of the technology required by a specific project; ▪ Can deal with technologists and extract meaning from jargon. Can translate technical issues into business consequences. 	<ul style="list-style-type: none"> ▪ Understands technology architecture and strategic issues; ▪ Has good relationship with senior IT managers; ▪ Works to deliver excellent benefits to the business by leveraging technology.

Competency Area	'Managing In' Focus	'Managing Out' Focus
Project Management Competencies		
Integration Management	<ul style="list-style-type: none"> ▪ Knows how to structure a project, and use an existing methodology to define activities, deliverables etc. ▪ Can develop a detailed plan, and produces a schedule which is realistic and accurate. ▪ Very good at developing a detailed budget which maps to the schedule. 	<ul style="list-style-type: none"> ▪ Knows how to structure a project into releases and sub-projects such that it aligns with business priorities and constraints. ▪ Very good at understanding complex project structures and translating the benefits to business stakeholders. ▪ Can review project schedules and spot where the schedule will – and will not – work.
Scope Management	<ul style="list-style-type: none"> ▪ Knows how to define scope at the detailed level, and can map that statement of scope into the 'end-to-end' statement of scope. ▪ Can manage the project within scope, and can identify what is 'out of scope'. ▪ Knows how to run a scope change control system. 	<ul style="list-style-type: none"> ▪ Works very hard to ensure scope is clearly defined, agreed and endorsed by senior project stakeholders. ▪ Negotiates always to minimise the impact from changes to scope. Encourages business to set up a Change Fund and to manage changes to scope from that fund. ▪ Clearly and unambiguously communicates the issues regarding controlling scope to senior players.
Time Management	<ul style="list-style-type: none"> ▪ Knows how to manage delivery against time. ▪ Very skilled in setting realistic time frames, and ensuring milestones are always met. ▪ Uses scheduling and tracking tools (such as MS Project) with a high level of proficiency. ▪ Captures the right data to clearly spell out how the project is performing against time. Clearly understands the purpose of capturing and analysing time metrics. 	<ul style="list-style-type: none"> ▪ Has a very good understanding of the overall Critical Path (CP), and the relationship between the CP, risk and competent resource allocation. ▪ Ensures all senior stakeholders understand the relationship between agreed milestones, shifting scope and meeting agreed accountabilities. ▪ Is very aware of the '10 pounds into a 5 pound bag' trap; is very skilful at trading off time, scope, cost and quality.
Risk Management	<ul style="list-style-type: none"> ▪ Understands risk management very well, and is skilled at controlling risk at the detailed level; ▪ Knows the relationship between risk and opportunity, and is continually on the look-out to advise business representatives 	<ul style="list-style-type: none"> ▪ Works very hard to ensure senior management understand the importance of being risk aware, rather than risk averse. ▪ Seeks to promote where risks can become opportunities.

Competency Area	'Managing In' Focus	'Managing Out' Focus
	<p>and the PD and Program Director of where those trade-offs exist.</p> <ul style="list-style-type: none"> ▪ Can develop a risk plan and allocate responsibilities for controlling risk. ▪ Confidently reports on risk as part of standard status reporting. 	<ul style="list-style-type: none"> ▪ Knows how to balance the 'risk / reward' model to optimise project outcomes. ▪ Clearly and unambiguously communicates risk status.
Communication Management	<ul style="list-style-type: none"> ▪ Works closely with team members to ensure good communications are established. ▪ Is aware of good communication practices, and how to use technology to support same (such as the Intranet, face-to-face, meetings etc). ▪ Provides active and valuable feedback where they are the target of various communications. 	<ul style="list-style-type: none"> ▪ Sets up a Communication Plan early in the project cycle and ensures all senior stakeholders buy-into that Plan. ▪ Monitors the effectiveness of the CP as the project proceeds, seeking feedback from stakeholders on a regular basis. ▪ Works to identify how improvements can be made to effective communications. Uses technology to achieve that end.
Issues Management	<ul style="list-style-type: none"> ▪ Knows how to work hard to ensure issues are captured and resolved early. ▪ Realises that registering an issue in the Issues Management system is a last – not first – resort. ▪ Knows how to work with individuals in achieving speedy resolution. 	<ul style="list-style-type: none"> ▪ Ensures that a highly efficient IM system is in place. ▪ Works with senior players to ensure they understand the consequence of risk, and how much time and effort can be saved by speedy resolution. ▪ Makes sure all stakeholders are aware of their accountabilities in managing issues effectively.
HR Management	<ul style="list-style-type: none"> ▪ Knows how to develop a HR Plan, but is aware that the people needed on the project may not all be available. ▪ Makes realistic assumptions regarding skills and resources available when developing the schedule. ▪ Communicates HR issues effectively to management, providing solutions and options to HR issues. 	<ul style="list-style-type: none"> ▪ Is very aware of HR bottlenecks and the importance of managing knowledge resources. ▪ Ensures all business units and functional groups can meet their promises on providing people to work on projects. ▪ Ensures all Human Resources policies and procedures are followed, and works to develop people working on the projects.
Quality Management	<ul style="list-style-type: none"> ▪ Knows how to develop a Quality Plan. ▪ Is familiar with Quality Requirements, and may work with senior project personnel in 	<ul style="list-style-type: none"> ▪ Ensures the Quality Plan is developed and all personnel carry out good Quality Management practices, such as Quality Assurance and Quality Control.

Competency Area	'Managing In' Focus	'Managing Out' Focus
	<p>developing Quality Agreements.</p> <ul style="list-style-type: none"> ▪ Is highly skilled in QA and QC and instils in others a strong quality focus. ▪ Measures quality through QA and defect repair effort. Works with the team to minimise defect repair effort. 	<ul style="list-style-type: none"> ▪ Knows how to spot quality 'hot spots' and ensures they are being managed. ▪ Very good at negotiating Quality Agreements, and works hard to ensure senior management are aware of the impact of quality. ▪ Knows how to effectively negotiate quality trade-offs.
Leadership & Personal Competencies		
Overall	<ul style="list-style-type: none"> ▪ The emphasis is on building maturity. The individual project manager will focus on their own, personal management competencies, such as control under pressure, clear and effective communications, compassion and empathy and developing cognitive and thinking skills. ▪ If the individual is from a technical background, then thinking outside the technology square is a critical skill. 	<ul style="list-style-type: none"> ▪ Senior project personnel must be extremely good listeners and communicators. Empathy enables them to see situations from the perspective of their key stakeholders. They should have exemplary personnel attributes, attracting respect and credibility from all concerned. They will move confidently amongst executive management, and have highly developed communication and negotiating skills. ▪ They will be the right role model for all people working on their projects.

Process 2: Set Competency Targets

In assessing an individual's competence, at least 2 perspectives need to be addressed:

1. The individual's assessment of his or her self.
2. The supervisor's assessment of the individual.

In carrying out the assessment, 3 attributes are assessed:

1. The level of knowledge the individual has regarding a particular competency.
2. The behaviour exhibited on the job.
3. An overall assessment of the individual's performance, taking into account what is known and what is done, and defined as the Competency Level.

Competency Levels

Competency is defined as a combination of what the individual knows and how he or she behaves. Whereas an individual can be regarded as *capable* of performing a particular task or activity (based on what that person may or may not know), the individual cannot be regarded as competent until a certain performance level is attained. Thus competency is defined as a combination of what is known and what is done.

Knowledge

Clearly the knowledge characteristic covers not only 'good practice theory', but also the practice as it is effectively applied at the particular organisation. This means that simply because the individual has appropriate qualifications (such as a post-graduate education qualification) or even an accreditation (such as PMI's PMP or AIPM's Qualified Project Manager), the knowledge of how the practice is best carried out at the organisation is the real focus of this assessment.

Behaviour

Whereas Knowledge is critical, it matters little if the individual does not carry out the practice. The Behaviour attribute measures how well the individual carries out a particular practice.

Competency Level

The overall competency uses a standard skill level / proficiency scale:

	Competency Level	Description
D	Development	No rating of the competency as the individual is in development of the competency.
U	Understands	Understands the theory of the practice, but possibly has not put it into practice or is quite inexperienced.
P	Practitioner	Carries out the prescribed tasks with minimal supervision. Acts independently.
C	Competent	Performs consistently, independently, executing tasks at, or beyond,

	Competency Level	Description
		the target competencies. Can manage / coach others in the task.
L	Leader	May have tertiary qualifications in the area. Extensive professional experience in the field. Widely recognised internally and externally as demonstrating mastery.

These assessments really only start to make sense when compared against a target set of competencies. Not everyone will be expected to exhibit all competencies at the highest level, so the job roles define both the core competencies plus the level to be attained for that competency.

Process 3: Improve Competence

Once project management personnel are assessed and the target levels of project management roles are known, it is possible to design Professional Development Programs which will elevate existing members of staff to competency levels such that they can take on higher management roles, and to either contract or hire-in additional staff (if this is required). The focus of this process is on designing and delivering Professional Development Programs (PDP's) for individual project managers to undertake.

Reference is made to the high-level process model as shown in Figure 17.

In understanding how this process will operate, it is first necessary to understand what makes up a Professional Development Program.

Professional Development Program

A PDP is an evolutionary model for progressing an individual's professional competencies. In the commercial sense, it is aligned with organisational objectives in meeting job role demands. It is often the case that these programs have not targeted specific competencies and have, for all purposes, been delivered as training programs. That model was clearly inadequate except in developing operational skills, and for higher order skills, the PDP needs to be more multi-dimensional than simply training. The model being used in this Handbook is represented in the following diagram:

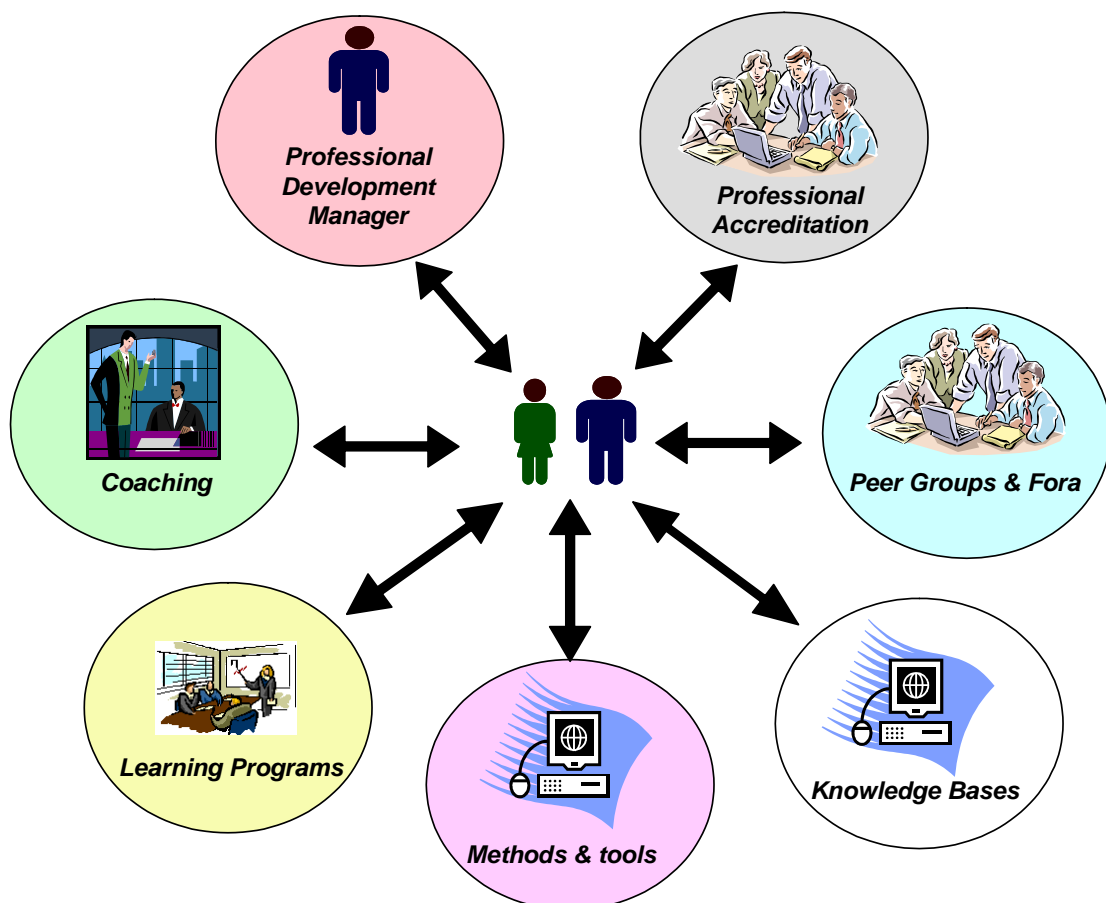


Figure 17: The major components making up a Professional Development Program

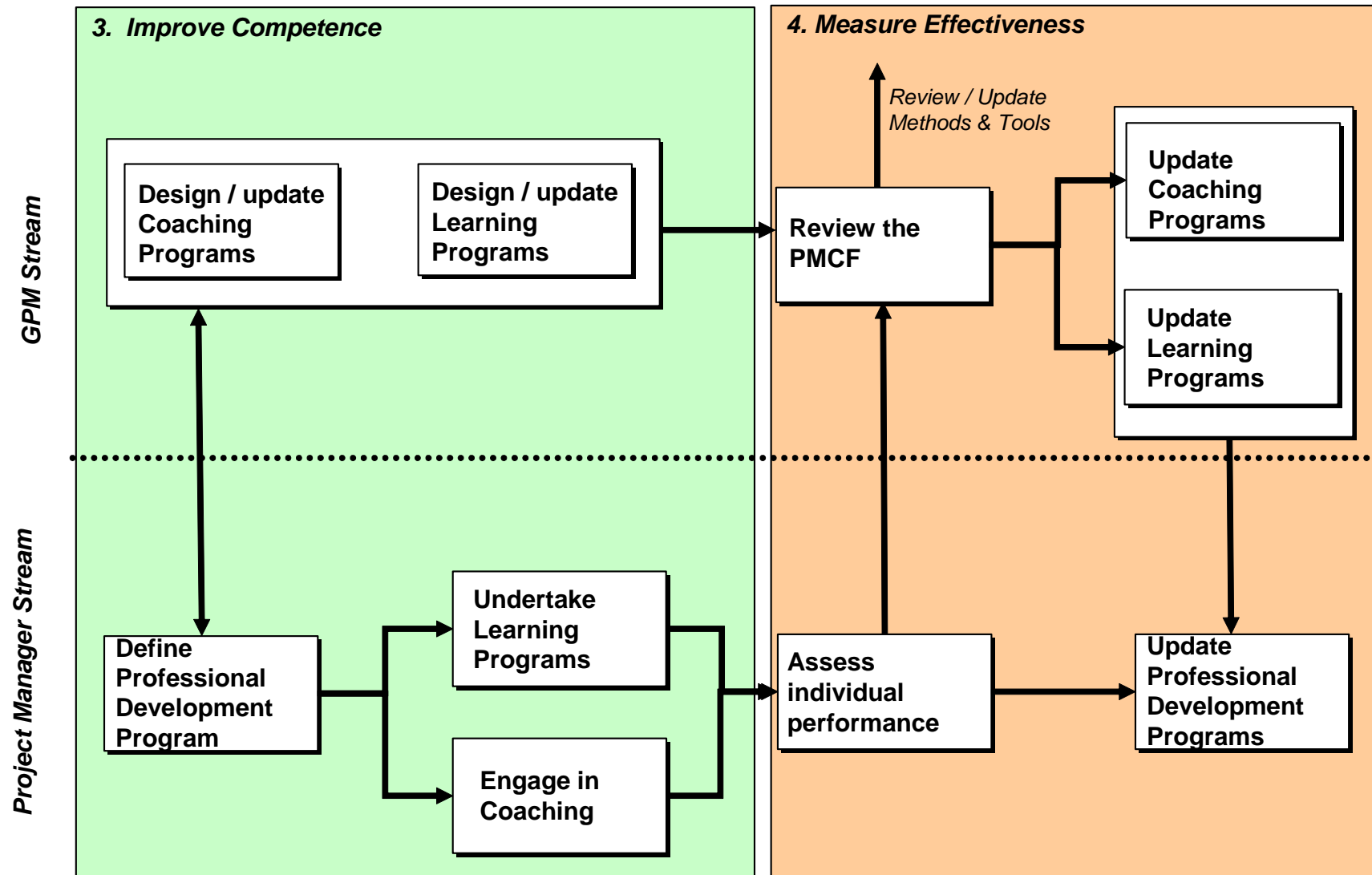


Figure 18: High-level process model of the 3rd and 4th processes making up the PMCF

Process 4: Measure Effectiveness

Once PDP's are in place it is necessary to measure their effectiveness to ensure they are hitting their targets. In reality both effectiveness and accuracy are measured across the following criteria:

1. Do the Learning Programs meet their explicit objectives, from the perspective of the individuals, their supervisors and key business stakeholders.
2. Are the results of post-project reviews (such Benefits Realisation and PIR) indicating whether the project managers are operating in a highly professional and competent manner? There are both quantifiable measures (such as increased success rates) and qualitative measures (surveys and feedback from key business representatives) used to support any assessment of project manager effectiveness.
3. Do Project Managers assess the Knowledge Bases are useful and are assisting them in improving their competency. This form of assessment will also be made against the standard methodologies and toolsets.
4. Does the Professional Accreditation model truly aid the development of competency? Furthermore, the organisation will assess whether having this accreditation both attracts high quality professionals and retains the right people.
5. Is mentoring working to improve the individuals' competencies? Assessments by mentors, project managers and supervisors will aid the analysis of how effective mentoring is and how it could be improved.

The result of these assessments will be to update the PMCF and competency standards, to review and update the components making up the PDP's, and to update the individual project manager's PDP.

PART III

Part III- Appendices

Appendices

Appendix A: What Makes A Good Project Manager

With so much talk and discussion on project manager competency, it is important to remember why this subject is so important: at the end of the day, both the individual and the organisation needs to know what characterises a good project manager; someone who can deliver successful projects, performing at a high level of proficiency and meeting (if not exceeding) the demands of their job role. The problem with specifying project manager competency without detailed knowledge of the organisation, type of project and external factors is that it will be a 'hit or miss' affair. Without this additional knowledge, the project manager may or may not deliver successful projects even if they perform to their job role requirements. To address this deficiency, a different approach is taken to understand the needs of the job so as to ensure good project outcomes. This approach includes Process 4 of the 'New Competency Framework' as identified above.

Essentially, the approach relies on understanding what makes a successful project, and the time to understand project success is during the Post-project Review (PPR), which should be carried out either during – or immediately after – Project Completion. At this point, hard questions should be asked concerning project success: did the project meet its contract terms? Were expectations delivered? Are benefits realisable? Are the stakeholders happy? Are senior management happy? What about the professional and ethical attributes – was the project conducted in a positive manner, with good leadership and high morale? Many questions leading to much analysis and an understanding of how the project manager (amongst many key project personnel) performed. What worked really well? Where are improvements needed? A successful PPR provides vital information which can feed into the Competency Standards, modifying them where necessary, along with updating the job role descriptions so that, with the target competencies for those roles correctly aligned, the right people will be selected to do the right jobs. This is how the organisation can both define and fulfil the need to make a good project manager. Or managers.

A very important issue which arises from the discussion on what makes a good project manager is: *the question is just as appropriate for Sponsors, Business Manager, Business Owner, Executive Sponsor, Programme Manager, Programme Owner, Steering Committee member and so on.*

Indeed, a poor Project Sponsor has been consistently identified as a 'top 5' cause of project failure. According to Cutter, SPR Inc, Gartner, Standish and many other researchers, the top 10 reasons why projects fail are:

1. The projects do not align well with business needs and individual priorities
2. Senior management reserve commitment
3. Accountabilities are not met
4. Cross-business and cross-function management is poor
5. Time, cost and resource estimates are wrong
6. Too much of the project work is new or unclear leading to blow-outs and dubious quality
7. Scope is not understood, not clearly communicated, poorly controlled – or all 3!
8. The wrong people are working on the project. The few, 'right' people are working on ALL projects.
9. Too many conflicts: business, milestone, resources and technology.
10. Poor methods, toolsets or technology.

Of the above 10 reasons why projects fail, 5,6,7 and 10 could be considered within the direct control (or at least, influence) of the project manager. The other factors are clearly under the control of other, mainly senior, managers. So in determining what makes a good project manager, recognition must be given to the overwhelming influence on good project outcomes reside with others.

An Empirical Approach

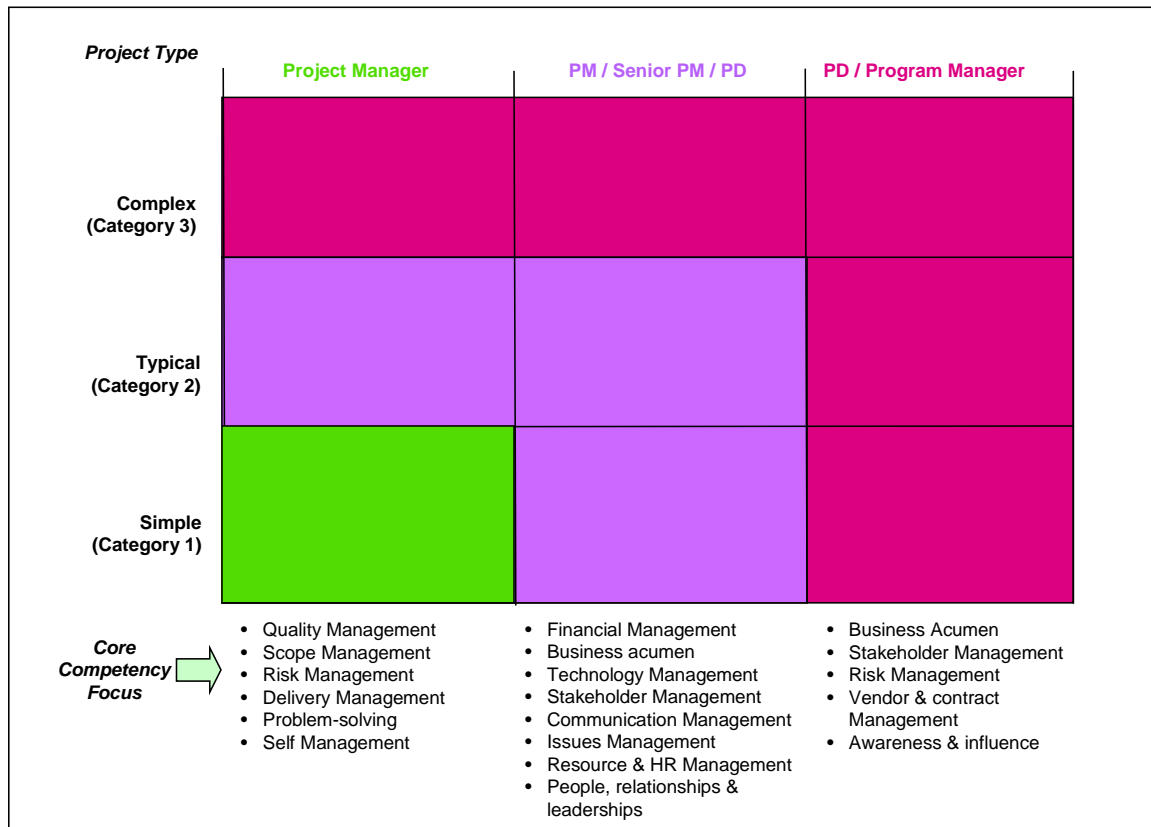
It is truly amazing the degree of knowledge the collective project manager has in understanding both project success, and what makes a good project manager. Good project managers are terrific problem solvers so, if the problem is to understand the practice of good project management then one can expect some very useful information. Throughout the many years the author has been spent consulting to organisations and projects, and the number of project managers who have attended K&M workshops³, the opportunity has been to gather project managers' understandings on what makes a good project manager. This data points to the following attributes of the 'good' project manager:

1. Works to establish good relationships and partnerships with key stakeholders. Establishes trust and mutual respect with sponsors and line managers alike.
2. Manages technology opportunities against risk. Understands that high risk is only justified on the basis of high reward.
3. Defines and carries out good decision-making processes – including endorsement of key deliverables and speedy resolution of issues. Is concerned to ensure key knowledge resources are used in the most efficient and productive manner.
4. Makes sure all accountabilities are both defined and agreed to, making use of Project Agreements where appropriate, and communicates clearly and unambiguously the need for agreed accountabilities to be met.
5. Understands that change is understood and makes contingencies for change, including a well-defined and understood change control process.
6. Ensures issues are owned and resolved at the lowest level, understanding that the speed of resolution is critical.
7. Ensures that what must be controlled must also be measured – and nothing beyond that! Time, resource utilisation, productivity, quality, budgets, milestones and changes must all be controlled.
8. Is very aware of organisation culture and maturity but will challenge the very same if they stand in the way of better project outcomes.
9. Understands that knowledge unravels complexity and works very hard to describe complex issues and situations in a way which all key stakeholders understand. Is very good at communicating and having people understand.
10. Instils esprit de corps with the troops and can genuinely claim to exhibit the 3 qualities of leadership: humanity, clarity and courage.
11. Is seen by all as being honest, ethical and trustworthy. Here is someone who is dependable.
12. Knows how to be creative where that creativity will lead to the right results: enhanced value to the client.

There are many more attributes identified by the project managers, however most have been synthesized into the above list.

³ Michael Knapp has personally conducted over 250 Project Management Workshops with over 3,500 project managers attending

The problem with this list is that it is rare that one would find all attributes being at the right level of competence in one person. Who is this guy, Superman? Indeed, it appears the 'perfect' project manager would need the wisdom of Solomon, the charms of Cary Grant, the communication skill of Oprah Winfrey, the prescience of a seer, a brain the size of the Universe and the patience of Job. As no one meets all these criteria the reality is that it is important to differentiate between core competency and ancillary competency. The approach to determining what are core and what are ancillary competency relies on understanding the type of project to be managed and the nature (read: maturity) of the organisation. The following model serves to illustrate this approach:



The model shows that as project complexity increases, and project outcomes also shift from operational to strategic, then the core competencies the project manager must exhibit also shift from the technical, repeatable and operational through to more 'high end' and, to a large extent, 'soft' or human competencies. The point is that ancillary skills may be 'outsourced', delegated to those in a position to be able to claim them as their core competencies as defined in their job role description.

(Anecdotal note: when managing a strategic and very large project (>\$20M budget) the author would outsource many of the technical tasks, such as scheduling, data capture, scope control, communication management etc to other project managers and project assistants. This is a common practice.)

Of course what flies in the face of the above approach is that the Peter Principle is still alive in many organisations and frequently shows its ugly face on projects. The move to competency-based programmes in developing people to have the skills necessary to successfully undertake project management roles is a direct response to countering the PP and its (sometimes) devastating impacts.

One major problem is that few (any?) organisations are successfully addressing having the right number of project managers with the right competencies. This is further complicated by the current understanding emerging from research that the 'knowledge and competency gap' between what, collectively, is known about project management, and what is required to meet the demands of industry and society, is expanding.

The reality is that organisations will be continually behind in knowing how to run successful projects: that just as we manage to update our practices and competencies then the game has moved on; complexity has incrementally increased and the demands on management practice and performance

has outstripped the ability to satisfy those demands. The counter to this scenario (which is still somewhat speculative although there is evidence to suggest it is, at least, partially true) is that it may be an inverse 'Xeno's Paradox'⁴, in that the rate of complexity increase will slow, or become more predictable whilst simultaneously, good practice makes quantum leaps (possibly wishful thinking).

⁴ Xeno, a Greek philosopher, proposed that the hare could never catch the tortoise since, at the time the hare reached the point at which the turtle was at, the turtle had moved on. Xeno called it a paradox because, clearly, the hare overtakes the tortoise; I'd call it confusing mathematical progressions with arithmetical progressions.

Appendix B: Project Management Competency Standards

Competency Standards in Current Use

Australia

The Australian Qualification Framework (AQF) has endorsed the National Competency Standards for Project Management (NCSPM). These standards define 6 levels of competency, broadly aligned with typical industry roles and responsibilities.

The Australian Institute for Project Management (AIPM) is closely aligned with the NCSPM and certifies project managers against the standards.

The Australian Universities which run qualification courses in project management all attempt to align with the NCSPM.

The NCSPM uses the PMI PMBOK as the base for defining competency areas.

Europe

The European body which sets competency standards in project management is the International Project Management Association (IPMA), which defines a 4 level accreditation:

Level A	The Certificated Projects Director
Level B	The Certificated Project Manager
Level C	The Certificated Project Management Professional
Level D	The Certificated Project Management Practitioner

The IPMA is developing its own BOK, known currently as the Global PMBOK.

United States

The US is dominated by the PMI. The accreditations awarded by the PMI are the Project Management Professional and the Certified Associate in Project Management.

PMI's Project Manager Competency Framework (PMCF) is still in draft stage but it appears close to complete and should be formally released very soon. That framework identifies 3 broad classes of competency (which they refer to as 'dimensions'):

1. *PM Knowledge Competence* (based on the PMI's Guide to the PMBOK)
2. *PM Performance Competence*, which refers to the demonstrable outcomes from undertaken activities and
3. *PM Behaviour Competence*, which describe the personal, or human, attributes for how tasks are undertaken.

This definition of PM competence is quite broad and appears complete but it still does not address all components of a complete competency framework.

Project Management Certification and Qualifications

The following table attempts to align the various certification levels and qualifications against the NCSPM.

	Certification			Qualification			
NCSPM Level	AIPM	IPMA	PMI	UNE	USyd	UTS (Short Course)	UTS (Post-graduate)
		Level A Certificated PD			Master of PM		
6	Master Project Director	Level B Certificated PM			Graduate Diploma	PMC (Strategic)	Master of PM MBA (Project Mgmt)
5	Registered Project Manager	Level C Certificated PM Professional	Project Management Professional	Advanced Diploma in PM	Graduate Certificate	PMC (Tactical)	Graduate Certificate
4	Qualified Project Practitioner	Level D Certificated PM Practitioner	Certified Associate in Project Management	Diploma in PM Certificate IV in PM		PM Context & Processes PM Competency (Operational)	

Table 1: The relationship between industry certification and higher education post-graduate qualifications

Issues With Current Competency Standards

The current competency regimes raise a number of issues:

1. The current competency frameworks are piecemeal rather than holistic. In other words, the frameworks focus on an individual's performance (measured and predicted) but ignore the other components required to deliver improved performance: how performance can be improved and the impact of the organisation - its maturity, people, products, programmes, projects, processes and practices – in determining performance outcomes.
2. They only assess the competency of the individual, not the organisation.
3. The historical perspective sees the standards being derived from the technical ('Hard Hat') industries: construction, engineering, manufacturing. These industries do not experience the same dynamics as other industries such as Financial Services, FMCG & Distribution, Product Development and ICT.
4. The competency levels imply it is desirable to reach the highest level of accreditation. There is an underlying assumption that to reach the highest level of accreditation means the individual will be carrying out a senior project management position, such as Project Director. There is no allowance for reaching a high level of competency in another role, such as Project Manager or Technical Team Leader.
5. The focus is clearly on projects rather than programs, with little recognition for the roles of Program Manager and Program Director, or Chief Project Officer.
6. The accreditation processes (such as for AIPM, IPMA and PMI) are somewhat divorced from demonstrated behaviour on the job, and accreditation can be achieved without direct reference to the assessment of work associates and supervisors.
7. There is little in the way of defining 'core' and 'ancillary' competencies, nor of weighting the specific competencies against both the job description and the individual's specific competency targets.
8. The roles of 'business' project manager and 'technical' project manager have not been differentiated. That is, there is no recognition of the fact that many organisational projects running today are dependent on the successful alignment of business integration with technology integration, and project managers will work in quite different roles depending on whether they manage the business integration, technology integration or the E-2-E project or program.
9. The standard Knowledge Base is PMI's Guide to the PMBOK, which, as the names suggests, is simply a guide to project management knowledge. It is not a knowledge base which implies there must be additional knowledge data made available to make the assessment process valid, and the assessment verifiable.
10. The competency standards do not address those who act in a senior governance position, such as Executive Sponsors, Sponsors, Steering Committee members and other key stakeholders.

References

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http://www.pmi.org/info/PP_Standards_Overview.asp?nav=0503