

Building enterprise project management capability 5

Developing the competence of project management personnel

by Professor J. Rodney Turner

I have already looked in previous issues at ways organisations can improve their project management capability, and what innovation and learning practices they can adopt.

This month - appropriately for the Education and Training Sourcebook - I will be looking at how to develop the project management competence of the people working for the organisation.

Competent individuals are one necessary element of the competence and capability of an enterprise (Figure 1) but you have to understand:

- what we mean by the competence of people
- the two essential components of competence, tacit and explicit knowledge
- the different competence required at different levels of management and
- how to develop someone's competence

Defining the competence of individuals

Across the continents there are three traditions of defining what we mean by the competence of individuals (Crawford, 2003.)

They are:

- the input approach popular in North America
- the process approach popular in Europe
- the output approach popular in Australia

The input approach

This approach focuses on the knowledge, skills and behaviours an individual needs to be competent. By this approach, competence is defined as follows (Crawford, 2003):

- competence is the knowledge, skills and personal attributes (motives, traits, self-concept) required by an individual to achieve superior performance

It is this view of competence that lies behind the body of knowledge developed by the Project Management Institute (PMI) in their Project Management Body of Knowledge (PMBoK) and their project management professional (PMP) certification programme.

The process approach

This approach focuses on what people need to be able to do to deliver their objectives. For a

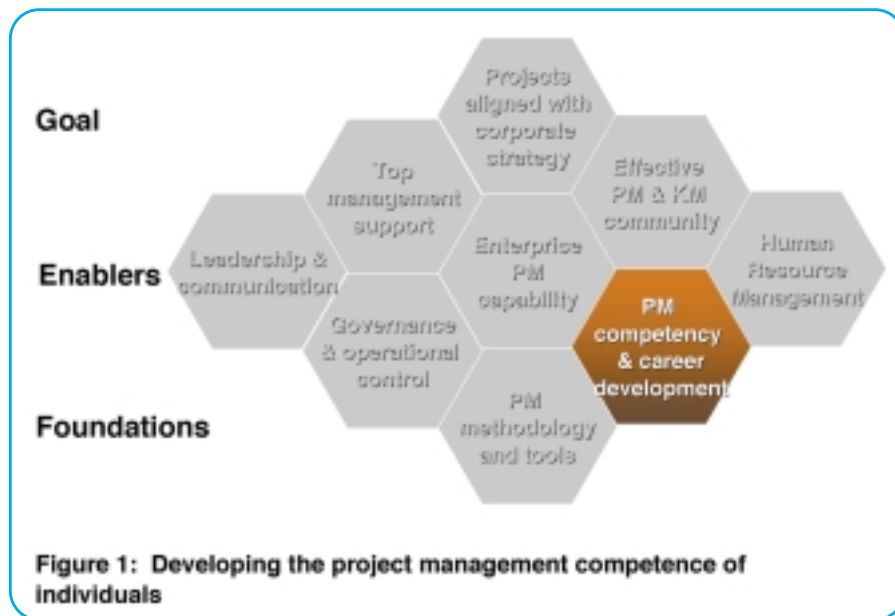


Figure 1: Developing the project management competence of individuals

project manager, that means what functions or processes they need to be able to undertake to successfully deliver their project.

It is this view of competence that lies behind the Baseline of Competence produced by the International Project Management Association's (IPMA) ICB, and the National Competency Baselines derived from it.

PMI's PMBoK does describe project management process, the eleven PMBoK functions, but the focus is more on the knowledge and skills required to implement them, rather than on what the project manager needs to be able to do.

IPMA focuses more on what the project manager needs to be able to do, rather than the knowledge and skills required.

The output approach

This approach focuses on what people are meant to be able to deliver. By this approach, competence is defined as follows (Crawford, 2003):

- competence is demonstrable performance in accordance with occupational, professional, and organisational competency standards.

It is the view of competence that lies behind the project management competency standards developed by the Australian Institute of Project Management (AIPM). However, occupational and professional competency standards have also been produced in the UK for project management, by, for instance, the

Engineering Construction Industry Training Board (ECITB) under an initiative called National Vocational Qualification (NVQs).

Closer to home, a job description is an organisational competency standard that describes what somebody has to be able to deliver in their job, and the standards to which they need to be able to do it.

An integrated view

The input approach above talks about superior performance, whereas the output approach talks about demonstrable performance in accordance with standards. Crawford (2003) combined the two approaches into a single definition of competence:

- Competence is
 - knowledge
 - skills
 - personal characteristics (motives, traits, self-concept)
- required to achieve demonstrable performance in accordance with occupational, professional, and organisational competency standards

I said in a previous article that an organisation should maintain its project management procedures. Those will define what knowledge and skills a project manager needs and what they need to be able to do. For a given role in the enterprise - that is for a project manager at a given level - the relevant elements will be incorporated into the job description for that role. The job description should also describe

the personal characteristics required by the role. I will come back to job descriptions later.

Implicit versus explicit knowledge

A concept I introduced in the last few months was the difference between implicit (or tacit) knowledge and explicit knowledge.

As long ago as 300BC, the Greek philosopher Plato discussed the difference between the structured knowledge someone has, which they get primarily from education and training courses they attend, and inherent knowledge they have, which they get from their experience. More recently the idea has been revisited by Polanyi (1967) and Nonaka and Takeuchi (1995), Table 1.

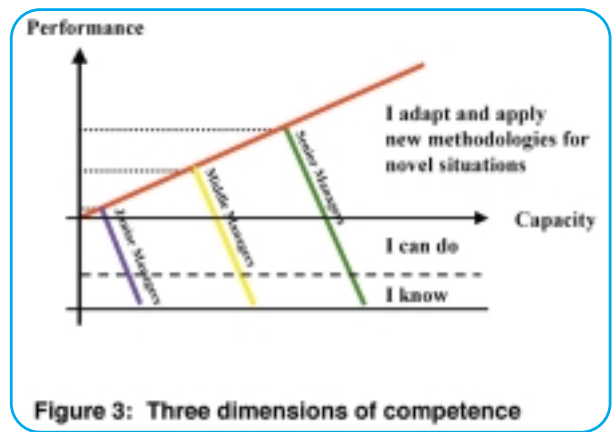
- **Explicit Knowledge:** This is structured, codified knowledge, as set out in systems and procedures, that an individual learns primarily from attending courses as part of an extended education or short-term training programme
- **Implicit or Tacit Knowledge:** This is personal or inherent knowledge a person has, which they have built up primarily through on-the-job experience. They cannot define or describe it, but they have to be able to draw on it to be able to do their job.

An illustration

To illustrate the idea behind implicit and explicit knowledge, and the different kinds of competence I described above, I use a model shown to me many years ago (Figure 3). This says that competence has three components illustrated by the verbs:

- I know
- I can do
- I adapt and apply

At the core of their competence, people need explicit knowledge, cognate rules they can apply to do their work. That gives them skills. They are able to apply that knowledge in routine ways. But they don't begin to become competent until they can take that knowledge, and routine skills, and adapt it to be able to address the unique situations they face. Being able to adapt and apply the knowledge comes from their experience of applying it in unique, unusual situations. It is like learning a foreign language.



can hold conversations. To hold a conversation you rely almost entirely on implicit or tacit knowledge. You cannot think of what to say in your own language and then translate it; you need to be able to speak spontaneously.

4. My French teacher at school told us that he thought he was really competent at French when he began to dream in French.

In project management terms this means:

- Knowledge: you need to know the mathematics of critical path analysis and earned value analysis
- Skills: you need to be able to apply that knowledge to work out solutions to standard problems in skill tests such as the PMP test
- Competence and performance: but you don't have true competence and you don't begin to perform until you can apply those concepts in unfamiliar situations to manage cost and time on your current project (process competence) and so manage the performance of the project to deliver it within time and budget (output competence)

Explicit knowledge as an entry ticket to competence

I have identified above several components of competence

- explicit and implicit knowledge, skills and personal characteristics
- the ability to be able to put those together to undertake functions and processes in unfamiliar situations
- the ability to be able to undertake those functions and processes to deliver successful results

There is growing evidence that explicit knowledge is only an entry ticket competence to be able to perform in a given role. By that I mean you need to have a basic level of explicit knowledge to be able to fulfil the role at all. But once you have that basic explicit knowledge, more explicit knowledge does not make you more competent. It is more of all the other things that makes you more competent, and you only get that through experience.

Table 1: Implicit versus explicit knowledge

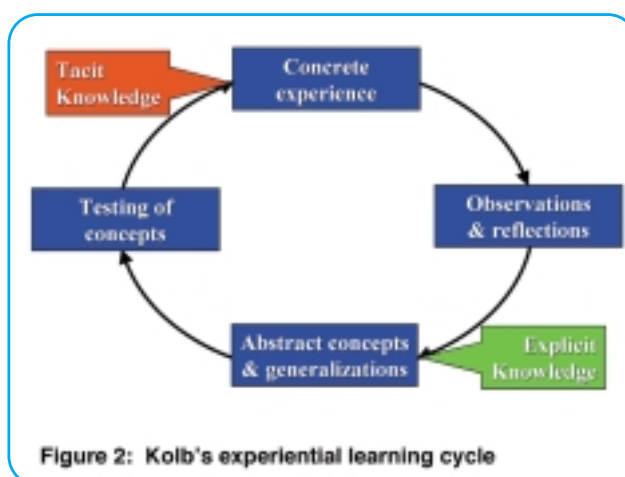
	<i>Implicit knowledge</i>	<i>Explicit knowledge</i>
Plato (300BC) called it	Right opinion	Philosophy
Polanyi (1967) called it	Tacit knowledge	Explicit knowledge
Nonaka and Takeuchi (1995) called it	Implicit knowledge	Explicit knowledge
Nature	Cognate	Codified
Primary source	Experience	Education

Kolb's Learning Cycle, (Figure 2), (Kolb, 1984; Turner, Keegan and Crawford, 2003), illustrates how an individual builds both implicit and explicit knowledge by combining formal education and on-the-job experience, and how the two reinforce each other.

A person gathers experience on-the-job, which enables them to observe and reflect. That enables them to build up abstract generalizations

and concepts, which will be reinforced through courses. They can then test their experiences, to enhance them and gather more and better experiences.

In a previous article I referred to Nonaka and Takeuchi's learning cycle. I think that refers more to the way organisations learn and develop enterprise wide capability, whereas Kolb's learning cycle refers more to the way individuals learn.



1. You need knowledge: consisting of vocabulary and grammar.
2. Once you have enough knowledge, enough vocabulary and grammar you can compose simple routine sentences. You can do this drawing on explicit knowledge, translating the sentences word by word, and then applying your knowledge of grammar.
3. Once you can compose enough sentences you can hold conversations. You don't begin to become truly competent until you

The PMP exam tests the basic level of explicit knowledge, so it tests that you have the entry ticket knowledge required. If you can't pass the PMP exam, you can't be competent as a project manager. But it doesn't test the other dimensions that you need to be fully competent. The IPMA certification process tries to test some of the other dimensions, particularly at the higher levels, but personally I am not sure how well it does that (but at least it tries).

Competence at different stages or levels of project management

Figure 3 also shows that at higher levels of management you need more knowledge. Indeed, it may not be so much as more knowledge as new and different knowledge. So at a given level of management, and in a given role, there is an entry ticket level of knowledge to fulfil that role, and more does not make you more competent in that role. However, you do need more, new and different knowledge to become competent at higher levels of management and in other roles. Thus a person's development needs to continue. This is the thinking behind IPMA's four level certification process.

There is a changing nature of the type of competence you need as you rise through the levels of management, Figure 4:

1. At lower levels, technical competence is very important. You need to be able to manage scope, time, cost, quality, etc. Some social competence is required; you need to be able to work with other people.
2. At middle levels social competence becomes more important. You need to be able to work with and manage people, and work with people from a broader range of backgrounds. You also begin to need some strategic competence.
3. At higher levels of management, social and strategic competence become increasingly important and technical competence less so.

Career paths

Figure 4 shows several levels of management,

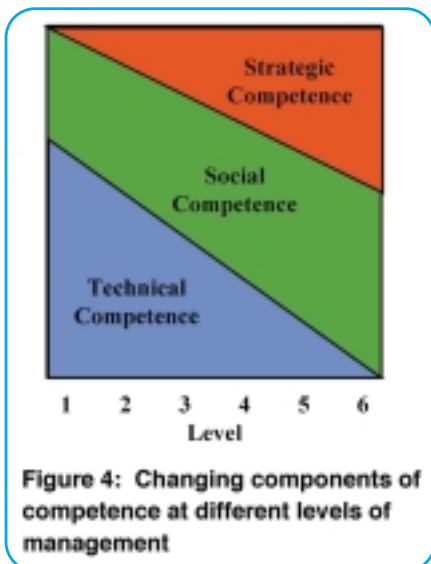


Table 2: Levels of management

Level	1	2	3	4	5	6
Role	Team member	Team leader	Junior pm	Project manager	Senior pm	Project director
Range of contact		Single function	Single company	Several companies	Several industries	Portfolios of projects
PMI			PMP			
IPMA			Level D	Level C	Level B	Level A

Table 2, with increasing ranges of contact and increasing responsibilities:

- a team leader manages a team consisting of a group of people of one function fulfilling a role on a project
- the junior project manager is responsible for a project consisting of several teams of different functions, but wholly within one company
- the project manager also has to manage relations with external suppliers and customers
- the senior project manager manages a large complex project involving people from a range of different types of industries
- the project director fulfils and executive role in the organisation, being responsible for several large projects and programmes.

I have shown the levels of PMI and IPMA certification, though the exact comparison of PMP with IPMA Levels of D and C is contentious and I don't really want to enter into that debate.

Within a given organisation, they will need to define several parallel career paths, Figure 5. There will be paths for:

- project managers
- engineering managers
- client managers
- line managers

I was at a seminar at Beijing University in September 2004 where a manager from Microsoft presented their career paths. I have shown the career paths as ladders (see figure 5); the manager from Microsoft called them swim-lanes and showed them running horizontally across the page – a metaphor I quite like. He showed career paths for:

- project management
- programme and portfolio management
- consultants
- line managers
- technical development

People usually spend most of their career in one path or swim lane. However, enlightened organisations do let people change, even encourage them to change up to about level three.

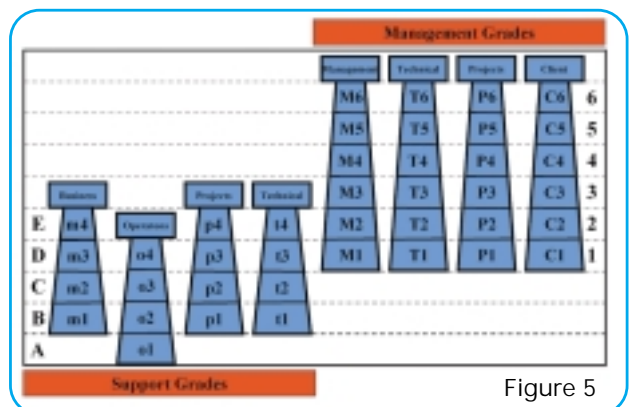
I have also shown career paths for managers to the right and support or technician grades to the left. I firmly believe that most project management roles are to the right, and that is what I have shown in Table 2, but listening to some people talk, you might be forgiven for thinking that project management grades are support or technician grades to the left.

Job descriptions

I mentioned above the need for job descriptions to define organisational competence standards. An organisation will need to write job descriptions for each of the levels of management as suggested in Figure 5, and for each of the career tracks it maintains. Job descriptions will define the knowledge, skills, personality traits, experience and performance standards required of each level, differentiating the different tracks. At each level there will be a range of desired competencies, as illustrated by Figure 4. The level of competence required at that management level is usually defined at a number of levels of performance, typically excellent, very good, good, fair, poor.

Developing individuals

The job descriptions then form the basis for developing people along each track, to ensure



that the organisation has a pool of competent people to fulfil the roles required.

Gap analysis

When somebody is first promoted to a management level, their profile against the various competencies for that level will probably be mainly fair to good. There may be one or two at poor, one or two at very good to excellent. When they are about to be promoted to the next grade we expect them now mainly score very

good to excellent. When someone is looking to improve their performance at their current management level, or to be promoted to the next, they will perform a gap analysis identifying the difference between their current performance, and where they would like to get to. They will use the job descriptions to assess the difference (or gap) between their current level of performance and their desired level of performance. They may do this on their own, or in conjunction with their line manager or mentor, particularly at the time of their annual appraisal. The identified gap will indicate what development the individual requires. The individual can then plan how they are going to close that gap:

- If they need to improve their knowledge, perhaps obtaining new knowledge for a new role they have just been promoted into, they can identify relevant courses, training programmes or education programmes
- If they need to improve their skills, they can identify what particular experiences they need to give them those new skills. This does raise a dilemma for organisations. Perhaps in their annual review a person identifies that they need to work on a particularly type of project to get the development they need, and then shortly afterwards a project comes long that would give them that opportunity. Does the organisation insist that they stay on their current project until it is finished, by which time the new opportunity will have passed? Or do you move them to the new project? Enlightened organisations will move people to the new project, unless the existing project is just starting or about to finish. Organisations need to develop people to develop enterprise project management capability, so it is in the organisation's best interest to give the person the opportunity. Further it shows the organisation is committed to their development, and they are more likely to stay with the company, rather

than looking elsewhere for the development they need. And the existing project may offer a development opportunity to someone else.

- Changing personality traits can be more difficult, but organisations can help people to identify their strengths and weaknesses, and to reinforce their strengths and nullify their weaknesses.

Providing support

There are many things organisations can do to help people develop their competence, (Crawford, 2003; Turner, Keegan and Crawford, 2003). I am going to mention just a few.

Assessment centres: These are structured workshops that typically last between one day to a week. They help people conduct their personal gap analysis and identify their training needs. They consist of individual and group experiential exercises, including simulations, problem solving, interviews and presentations.

Career committees: Many organisations will maintain a committee of senior managers whose role it is to watch over the development of people. They will predict the future resourcing needs of projects, looking many years into the future. They will keep track of the development of existing project managers, and try ensure that future needs will be met. They will also work with individuals and their managers to help them conduct their gap analysis and identify appropriate development opportunities, including courses and project experiences. One thing they can help overcome is stopping selfish



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managers holding onto their best people. Managers will want to retain their best people, but that can sometimes be bad for the individual's development (and we have already seen that may cause them to leave the company). It can also be bad for the organisation which will want to develop people in the way that is best for the organisation, not individual managers. The career committee can stop that happening by taking an organisation wide view.

Mentoring: Coupled with career committees is mentoring. This is the approach whereby each junior project manager is coupled with a more senior manager who is perhaps one or two management levels above. The mentor will not be the individual's line manager. The mentor will help the individual solve any problems they might encounter and help them in their development planning.

Project management community: This can all take place within the project management community which I have discussed in my last three articles.

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