Acceptance and Application of Project Management Knowledge

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Abstract

Acceptance and understanding of project management (PM) tends to be limited by project managers (PM's) who have a specific technical training and follow one or two major theories on project processes. Consequently, PM's may encounter difficulty in being 'recognised' by employers and moving from one professional discipline to another.

This paper examines knowledge areas applied 'in the field' by PM's, and provides them with knowledge about the constancy of application of project theories; further, a new model of what constitutes PM and enables flexibility for PM's is suggested.

As there was little extant literature about PM's being able to transfer from one professional discipline to another, or to what degree different knowledge areas were applied, it was determined that exploratory research was appropriate.

The results strongly indicate that organisations that rely on programs and projects to support the delivery of their strategic objectives will benefit from implementation of the suggested PM revised hypothetical model. The model incorporates the nine knowledge areas of The Project Management Institute (USA) and six knowledge areas extracted from the PM methodology PRINCE2. Further, the additional focus of People Specific Management (PSM) at Level 3 of the suggested revised hypothetical model is recommended.

Qualifications for PM's do make a difference! In addition to demonstrating the importance of PM qualifications to augment PM's successful transfer across disciplines, further research is suggested regarding the need for training to be 'compulsory' and follow the developmental levels described in the up-to-date PM model developed during the research for this paper.

Introduction

Project Management relies on knowledge areas such as tacit knowledge, which underpins the knowledge, learning processes and abilities of individuals. Thus, although there has been substantial research into these areas (Grant 1996), little has been completed in general literature that provides adequate insight (van Donk & Riezebos 2005, p.75) on the focus of this paper; viz., Acceptance and Application of Project Management Knowledge.

In their research into the influence knowledge management has on project success, Reich and Wee (2006, p.11) suggest "results show that the PMBOK® Guide has a strong bias toward explicit and declarative (i.e., "how") knowledge, and pays less attention to tacit and causal (i.e., "why") knowledge".

The role project managers play in the acquisition and application of knowledge is outlined in the belief of Anderson (2006, p.22) that "the role of the project manager is to facilitate this blending of knowledge, e.g., by establishing and opening up arenas and creating channels for information and knowledge sharing".

Experience adds to a PM's underpinning knowledge which is gained through formal training and education, and one might conjecture that 'overall knowledge' is likely to be transferable from one business sector to another. Crawford and Pollack (2007, p.93) in their study of project management knowledge and practice, discuss the generic nature or otherwise of project management knowledge; viz., "at the overall level project management knowledge appears to be generic across industry sectors". However, they go on to suggest that "use of project management practices appears to be

generic … but not across industry sectors". It is anticipated this paper will add to the discussion by providing data to further clarify the generic nature of PM knowledge.

Types of PM Knowledge

Reich and Wee (2006, p.13) discuss their belief that the PM needs both project management knowledge and 'domain' knowledge; they report that "two broad types of knowledge had been identified: project management knowledge and project domain knowledge. Each type of knowledge is important to the successful completion of the project". Similarly, Sutterfield, Friday-Stroud and Shivers-Blackwell (2006, p.32) argue that "regardless of the organizational project, the project manager must be adept at project planning and managing multiple project variables simultaneously throughout the planning and implementation phases to maximize the chance of keeping the project within its projected scope". Resultant questions are whether one should assume that project planning is a generic knowledge area and the skills, therefore, transferable; or whether, in order to plan successfully a PM requires a basis discipline knowledge within the sector.

'Soft Skills'

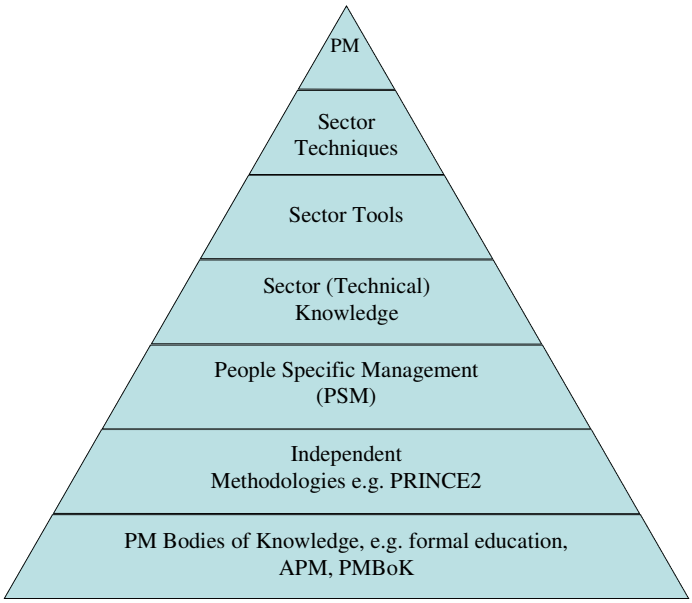
Muzio, Fisher, Thomas and Peters (2007, p.31) suggest that soft skills are an established need whether you are looking at corporate strategy or even a tactical perspective. There are many examples of projects that are completed 'over' time (Hameri & Heikkila 2002, p.143), 'exceeding' budget and 'failing to deliver' the envisaged benefits despite the focus on methodologies and frameworks developed to assist in the management of projects.

Brockhoff (2006, p.33), in finalizing his discussion on the 'Novelty Factor' in project management and how project managers deal with such instances, suggests "we can conclude that a project manager who interacts with his or her team, who can motivate and who can critically or logically evaluate project performance, achieves the best project results". Sutterfield, Friday-Stroud and Shivers-Blackwell (2006, p.32) take the idea further and state their belief that "in order to be effective and achieve successful project outcomes, project managers must become skilled at managing and resolving conflict between various project stakeholders while keeping the project on time and within budget".

Hypothetic Model

Assessment, in terms of the current hypothetical model in PM literature, suggests that the current PM body of knowledge has a primary focus on the technical and methodological aspects. However, there is a growing awareness of the need to address the relationship aspects of managing stakeholders, use of the 'people skills' and the knowledge base required for these aspects of the management of projects. Time and again, PM's discussions stress the importance of communication and involving and informing all concerned in a particular project or program. A suggested revised model with the inclusion of 'People Specific Management' (PSM) is shown in Figure 1 below.

Figure1
Hypothetic PM Model



As shown above, the inclusion of the PSM level in the hypothetic model from extant literature increasingly is seen as a necessary factor in the management of projects. For the purposes of later reference to levels in the above model, it is stated that the base of the pyramid is level 1 and the top of the pyramid, in the case of the model, is Level 7.

Methodology

As there is little extant literature about PM's being able to transfer from one professional discipline to another, what knowledge areas they use and to what degree, it was determined that exploratory research was appropriate. Therefore, it was considered worthwhile to use a focus group of project managers drawn from the Australian Institute of Project Management (AIPM) Registered Project Manager program (RegPM). The group consisted of ten PM's who were in the process of undertaking assessment in the AIPM's program for PM professional recognition. The information generated by the focus group was linked directly to the formulation of research hypotheses and formed a basis on which the structure of an appropriate survey instrument was constructed.

Formal Educational Qualifications in PM

The distribution of the participants in respect to whether or not they had formal PM training and qualifications is demonstrated in the following Table 1. The term 'formal' has been interpreted as the participants undertaking tertiary or similar education and training courses. It is worthy of note, that not one respondent indicated having undertaken an undergraduate degree in project management! In the author's opinion, this is due to the lack of PM undergraduate degrees which has occurred as a result of project management being a discipline that becomes attractive to individuals only after they have gained experience, education and qualifications in an initial discipline or profession. Thus, it is acknowledged that the provision of project management education in tertiary institutions is conducted primarily at the postgraduate level.

It is evident from Table 1 that 26 PM's (42.6% of participants) had either no PM or only informal PM qualifications; this is a major issue for potential employers and professional accreditation organisations and one that would be unacceptable in most professions.

Table1
PM Qualifications

	Frequency	Percent	Cumulative %
None	16	26.2	26.2
Informal	10	16.4	42.6
Diploma	18	29.5	72.1
Advanced Diploma	11	18	90.2
Masters Degree	6	9.8	100.0
Total	61	100.0	

Summary of level 1

When considering whether to list all the results for each of the different knowledge areas or to list the subtotals, it was felt there was little, if any, statistical significance in the listing of all the sub-questions. The following Table 2 summarises the findings across all the PMI's nine knowledge areas. When examining the hypothetic model Level 1, it is interesting to note in Table 2 below, the average maximum score across all nine areas as indicated by the respondents is 4.15 with an average standard deviation of .78. This suggests that these nine knowledge areas indeed are important and practised on a regular basis and further supports the hypothetic model in Figure 1.

Table 2
Level 1 Category Results

Category of Management	Average Minimum	Average Maximum	Mean	Std. Dev.
Integration	1	5	4.25	.79
Scope	1	5	4.23	.70
Time	1	5	4.21	.70
Cost	1	5	4.05	.88
Quality	1	5	4.08	.84
Resource	2	5	4.07	.78
Communication	1	5	4.11	.78
Risk	1	5	4.26	.79
Procurement	1	5	4.06	.82
Totals	10	45	37.37	7.08
Average	1	5	4.15	.78

A point of interest for future research: to establish whether those practising project managers with no specific project management training, would rate their use of the knowledge areas 'on a par' with those project managers who had undertaken medium or high-level PM training.

In examining the data in relation to Level 2 of the hypothetic model, each of the following six tables is presented to demonstrate the respondents' indications of their use of the six knowledge areas encapsulated within the PRINCE2 methodology, propertied by the Central Computer and Communications Agency (1999), these six areas were included in the questionnaire. Respondents indicated the importance of each of the various items by ranking the degree to which they were used in practice. Responses were indicated using a Likert scale; viz., 1 = never used, 2 = rarely used, 3 = occasionally used, 4 = often used, 5 = constantly used.

As with the analysis of Level 1, it was felt there was little if any statistical significance in the listing of all the sub-questions. The following Table 3 summarises the findings across all the suggested six knowledge areas within the PRINCE2 methodology. When examining the hypothetical model Level 2, it is interesting to note in Table 3 below, the average maximum score across all six areas as indicated by the respondents is 4.01 with an average standard deviation of .86. In terms of the demonstration of the use of the knowledge areas, although the average maximum score is slightly lower and the standard deviation slightly higher than Level 1, the scores are still considered to be significant. This suggests that these six knowledge areas are indeed important and practised on a regular basis and, further, supports the hypothetic model in Figure 1.

Table 3
Level 2 Category Results

Category of Management	Average Minimum	Average Maximum	Mean	Std. Dev.
Administration	1	5	4.15	.91
Assurance	1	5	4.22	.77
General	1	5	4.17	.74
Client-side	1	5	4.15	.79
Executive	1	5	3.67	.96
Supplier-side	1	5	3.68	1.02
Totals	6	30	24.04	5.19
Average	1	5	4.01	.86

In analysing the results for Level 3, as opposed to Levels 1 and 2, it is helpful to take each sub-question within People Specific Management, as contained within the questionnaire.

Table 4, represents the responses to the first sub-question related to Level 3 of the revised hypothetic model (Figure 1); 'I have identified the culture of the parent organisation or client'. A total of 49 (80%) respondents indicated either 'Often done or currently do' or 'Managed across multiple projects'; this suggests sufficient use of the first sub-question for it to be included at Level 3 and supports the inclusion of PSM within the revised model (Figure 1).

Table 4
'I have identified the culture of the parent organisation or client'

	Frequency	Percent	Cumulative Percent
Never Done	2	3.3	3.3
Done under supervision	1	1.6	4.9
Done without supervision	9	14.8	19.7
Often done or currently do	23	37.7	57.4
Managed across multiple projects	26	42.6	100
Total	61	100	

Table 5, represents the responses to the second sub-question related to Level 3 of the revised hypothetic model; 'I have attempted to modify/change the culture of the organisation or client'. There is a much greater variance in the responses with regard to this question. However, a total of 48 (78.7%) of respondents indicated either 'Done without supervision', 'Often done or currently do' or 'Managed across multiple projects'; this suggests sufficient use of the second sub-question to be included at Level 3 and supports the inclusion of PSM within the revised model.

Table 5
'I have attempted to modify/change the culture of the organisation or client'

	Frequency	Percent	Cumulative Percent
Never Done	7	11.8	11.8
Done under supervision	6	9.8	21.3
Done without supervision	10	16.4	37.7
Often done or currently do	21	34.4	72.1
Managed across multiple projects	17	27.9	100
Total	61	100	

Table 6 represents the responses to the third sub-question related to Level 3 of the revised hypothetic model; 'I have promoted active disagreement in the project team'. This question demonstrates the greatest variance in the responses discussed to this point. The number of respondents who indicated 'Never Done' when considering the promotion of active disagreement, is a particular point of interest because various authors of project management texts cite this as an important factor in project

formation and on-going management. Gray and Larson (2006, p.364) discuss the view that, to ensure the avoidance of critical mistakes "project managers need to encourage healthy dissent in order to improve problem-solving and innovation". When discussing the different types of conflict occurring within a project, Pinto (2007, p.200) argues that "conflict actually introduces an element of tension that produces innovation, creativity, and higher productivity". To conclude the discussion in relation to the question relating to active disagreement, Gray and Larson (2006, p.175) suggest that "conflict can be handled in several ways, but one thing seems sure: conflict avoiders do not make successful project managers". The current researcher is not suggesting, nor is in a position to suggest, that the respondents who indicated 'Never Done' are not successful project managers. However, this is an area worthy of a more in-depth study in the future; it would be interesting, for example, to understand why a significant number of project managers appear to be conflict averse.

Table 6
'I have promoted active disagreement in the project team'

	Frequency	Percent	Cumulative Percent
Never Done	22	36.1	36.1
Done under supervision	6	9.8	45.9
Done without supervision	11	18.0	63.9
Often done or currently do	15	24.6	88.5
Managed across multiple projects	7	11.5	100
Total	61	100	

Table 7 represents the responses to the fourth sub-question related to Level 3 of the revised hypothetic model; 'I have intentionally created personal friendships in the project team'. Although the variance here is not as great as that demonstrated in the previous question as shown in Table 7, this question demonstrates a variance worthy of future research, as 14 respondents (23%) have indicated having 'Never Done' as opposed to 40 (65.6%) respondents having indicated either, 'Often Done' or 'Currently Do' or 'Managed Across Multiple Projects'. Simply, it may be a personal trait of the project managers in question, or a cultural issue within their respective organisations.

Table 7
'I have intentionally created personal friendships in the project team'

	Frequency	Percent	Cumulative Percent
Never Done	14	23.0	23.0
Done under supervision	2	3.3	26.2
Done without supervision	5	8.2	34.4
Often done or currently do	23	37.7	72.1
Managed across multiple projects	17	27.9	100
Total	61	100	

Table 8 represents the responses to the fifth sub-question related to Level 3 of the revised hypothetic model; 'I have intentionally created a collective vision for the project team'. A total of 51 (83.6%) of respondents indicated either 'Often done or currently do' or 'Managed across multiple projects'; this suggests sufficient use of the fifth sub-question to be included at Level 3 and supports the inclusion of PSM within the revised model. The notion of creating a project vision is supported by Gray and Larson (2006, p.356); viz., that "a vision inspires members to give their best efforts".

Table 8
'I have intentionally created a collective vision for the project team'

	Frequency	Percent	Cumulative Percent
Never Done	2	3.3	3.3
Done under supervision	0		
Done without supervision	8	13.1	16.4
Often done or currently do	26	42.6	59.0
Managed across multiple projects	25	41.0	100
Total	61	100	

Table 9 represents the responses to the sixth sub-question related to Level 3 of the revised hypothetical model (Figure 4); 'I regularly engage in face-to-face updates with team members'. As can be seen from the results below in Table 9, the regular use of the sixth sub-question warrants its inclusion at Level 3 in the revised hypothetic model.

Table 9
'I regularly engage in 'face to face' updates with team members'

	Frequency	Percent	Cumulative Percent
Never Done	0	0	0
Done under supervision	0	0	0
Done without supervision	2	3.3	3.3
Often done or currently do	28	45.9	49.2
Managed across multiple projects	31	50.8	100
Total		100	

Table 10 represents the responses to the seventh and final sub-question related to Level 3 of the revised hypothetic model; 'I regularly engage in face-to- face updates with stakeholders'. As can be seen from the results below in Table 10, the regular use of the seventh sub-question warrants its inclusion at level 3 in the revised hypothetic model.

Table 10
'I regularly engage in 'face to face' updates with stakeholders'

	Frequency	Percent	Cumulative Percent
Never Done	0	0	0
Done under supervision	0	0	0
Done without supervision	4	6.6	6.6
Often done or currently do	26	42.6	49.2
Managed across multiple projects	31	50.8	100
Total	61	100	

Summary of Level 3

Data is examined in relation to Level 3 of the hypothetic model; i.e., the Figure 1 model devised from a review of extant literature. Table 11 is presented to demonstrate the respondents' indications of their use of People Specific Management (PSM). The questionnaire contained seven questions in the PSM section and the respondents indicated their use of the PSM knowledge area via a Likert scale; viz., 1 = never used, 2 = rarely used, 3 = occasionally used, 4 = often used, 5 = constantly used.

Table 11
People Specific Management (PSM)

	N	Minimum	Maximum	Mean	Std. Dev.
People-specific Management	61	1	5	3.84	.67

It is noted that the mean response is in the rating of '3 = occasionally used' category. Also, the standard deviation of responses indicates the lowest spread of responses to date. Consequently, as in the previous discussion, the success of the project management process and indeed the project manager, arguably, hinges on the PM's ability, not just to identify, but liaise with and manage, every stakeholder; the process is cited often as a success factor for projects (Bourne & Walker 2006, p.6). The current research indicates that there is sufficient use of the knowledge area indicated at Level 3, albeit not as widely or consistently applied as the knowledge areas within Levels 1 and 2. Nevertheless, the reported usage of People-specific Management (PSM) is sufficient for its continued inclusion as Level 3 of the hypothetic model. Further research as suggested and discussed may lead to a greater understanding of the knowledge, both identified and utilised, in project management at Level 3.

Hypothetic Model – Levels 4, 5 and 6

The current research was not designed to investigate the project managers' use of sector knowledge, sector tools or sector techniques. Nevertheless, given the almost exclusive emphasis on PM training relying on PMBOK® and/or PRINCE2, the development of the revised hypothetic model with its seven levels is a substantial finding in the current study. Levels 1 and 2 have been examined in some detail in relation to the concept of successful cross-sector transfer by PM's and the relevance of Level 3 established.

However, it is the contention of the author, that there is a critical need for new project managers to ascertain a base of working knowledge of the sector in which they are about to engage, or within which they find themselves operating. Consequently, the revised model in Figure 1, as interpreted from literature, can be used as a more appropriate and holistic approach to project management.

Conclusion

Organisations that rely on programs and projects to support the delivery of their strategic objectives will benefit from implementation of the project management revised hypothetic model. It will result in the better management of the development of project managers and, therefore, assist to achieve an organisation's objectives and improved management of projects themselves. To achieve this outcome will require changes to education and management practice (in relation to PM), also procedures and changes to the culture of some organisations, to enable the revised model to be accepted as the process whereby the business delivers its project objectives.

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