

Standards for a Global Profession— Project Management

Lynn Crawford, Director of Program, Project Management, University of Technology, Sydney

Introduction

Project management is developing as a profession that transcends national and industry boundaries. As project management is adopted by corporations for global projects, and as individual and corporate customers begin to demand consistency in products and services regardless of location, there is rising demand for shared understanding of basic project management terminology and techniques. This need, of corporations and project personnel, has been reflected in discussions at Global Project Management Forums conducted in association with key international project management conferences since 1994. An important question is whether it is possible to develop generic, globally consistent project management standards that are valid and acceptable across industries and national boundaries.

This is one of the questions being addressed by a major research project, *Developmental Assessment of Project Management Competence*, which is being conducted internationally, with the support of the Project Management Institute (PMI), the International Project Management Association (IPMA), Association for Project Management (APM), PMI South Africa, and Human Systems Limited. The project is funded by the Australian Research Council and founding partners, the Australian Institute of Project Management, the Department of Public Works and Services, the NSW Department of Housing, and Caliper International.

Developmental Assessment of Project Management Competence

Data for the project are being collected from organizations and project personnel in Australia, the United States, the United Kingdom, Europe, and South Africa with possibility of extension, in later phases, to Asia, Latin America, Canada, and New Zealand. Data collection commenced in October 1997, and the first phase is due to be substantially complete by July 1998. The three-year study aims to develop:

- competency profiles of effective project personnel for different project environments
- a performance appraisal system and assessment center for project management competence guidelines for job design.

(For a more detailed explanation of the background and project methodology, see Crawford 1997).

Data Collection

In developing competency profiles of effective project personnel, data are being collected against two de facto international standards—PMI's *Guide to the Project Management Body of Knowledge* (PMI 1996) and the *Australian National Competency Standards for Project Management* (AIPM 1996). This is supported by assessment of core personality characteristics, qualifications, and experience and a detailed questionnaire gathering details of the project environment, including such factors as level of responsibility, number and size of projects managed, project complexity, organizational project management maturity, and application area.

This paper reports on preliminary results from the study with emphasis on those project results that contribute to the debate on feasibility of generic, globally consistent project management standards.

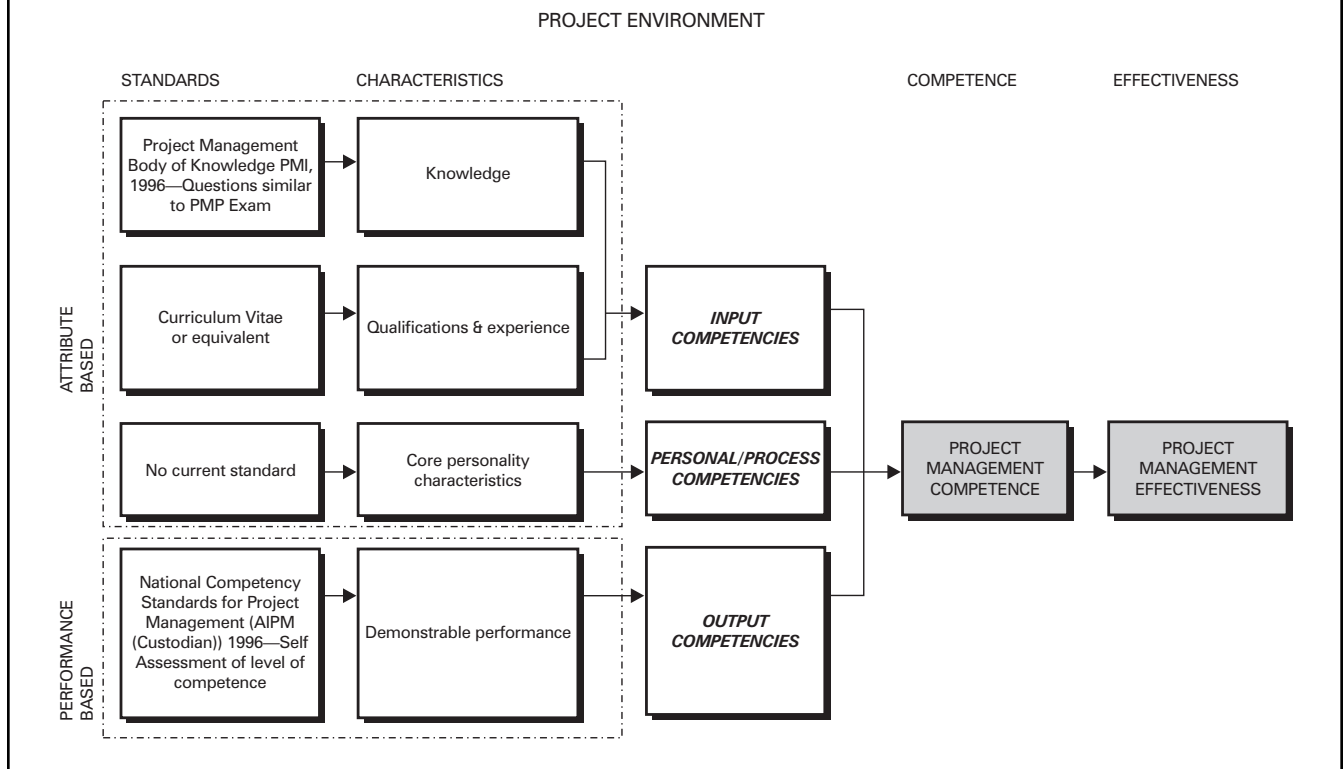
Project Management as a Global Profession

Globalization is an issue both for multinational corporations (MNCs) and for locally based corporations that are required to service consumer needs that are becoming more internationally homogenized through communication technologies and travel. Individual and corporate customers are demanding consistency in *products and services regardless of location* (Ives 1993). Organizations are benchmarking their operations against "world class" standards and assembling teams of knowledge workers from around the world.

Globalization has led to a need for shared understanding of basic project management terminology and techniques not only throughout organizations, but between countries. Project management professional organizations have recognized this need for generic, globally consistent project management standards, but the real demand comes from corporations and increasingly from mobile project personnel.

The feasibility of project management standards that are applicable and useful across organizations, industries,

Exhibit 1. An Integrated Model of Project Management Competence



and national boundaries has been the subject of considerable debate. This debate has primarily been conducted through the Global Project Management Forums held in association with major international project management conferences since 1994. The issue of the global versus the local is not, however, restricted to project management but is actively pursued in the corporate globalization literature (Ives 1992; Tractinsky 1995; Hedlund 1995; Bartlett 1989).

In practice, while the debate about feasibility of globally consistent and generic project management standards continues, there are existing standards that have achieved a degree of international acceptance. ISO Quality standards have achieved international acceptance. In project management, PMI's *Guide to the Project Management Body of Knowledge (PMBOK Guide)* (1996) and PMP Certification process, the Australian National Competency Standards for Project Management (AIPM 1996), the RegPM (Registered Project Manager) (AIPM 1997) process, and the Association for Project Management's APMP Qualification have attracted considerable interest and in some cases a significant following.

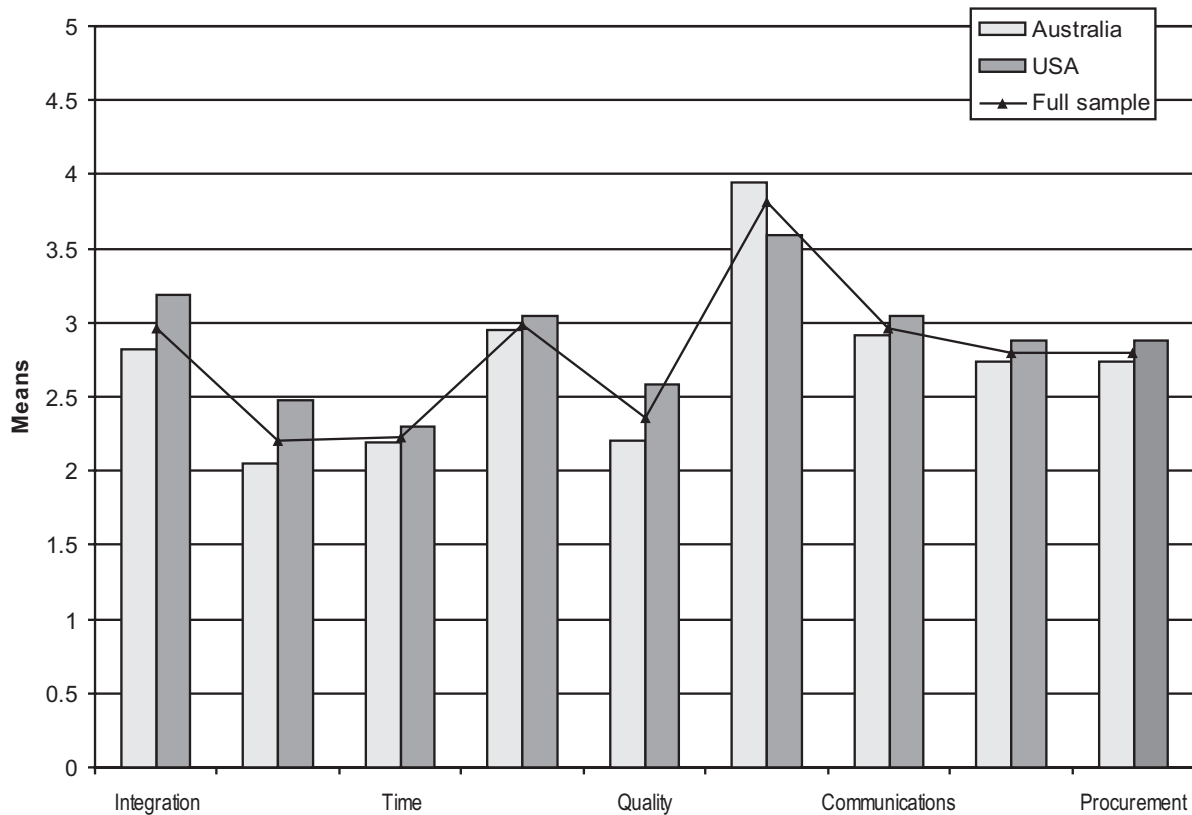
Feedback from Research

Early results from research on project management competence (Crawford 1997) provide feedback on the applicability of two project management standards across organizational and industry boundaries. Results presented here are preliminary only, and variation can be expected when a larger data set becomes available. The intention here, however, is to provide a status report to members of PMI in recognition of PMI's support for the project.

In order to provide insights into the feasibility of generic, globally consistent project management standards for project management competence, data collected to March 1998 have been analyzed for:

- two countries
 - Australia
 - United States
 - and
 - two industry sectors
 - Engineering and Construction
 - Information Systems, Management and Movement.
- Information Systems, Management, and Movement brings together Information Systems and Information

Exhibit 2. Project Management Knowledge Areas—Full Sample, Australia and USA



Management and Movement (refer to PMI's Specific Interest Group structure).

The integrated model of project management competence illustrated in Exhibit 1 has been developed as the basis for data collection and analysis for this project.

The preliminary results in this paper are based on only four of the data collection instruments used in the project, namely:

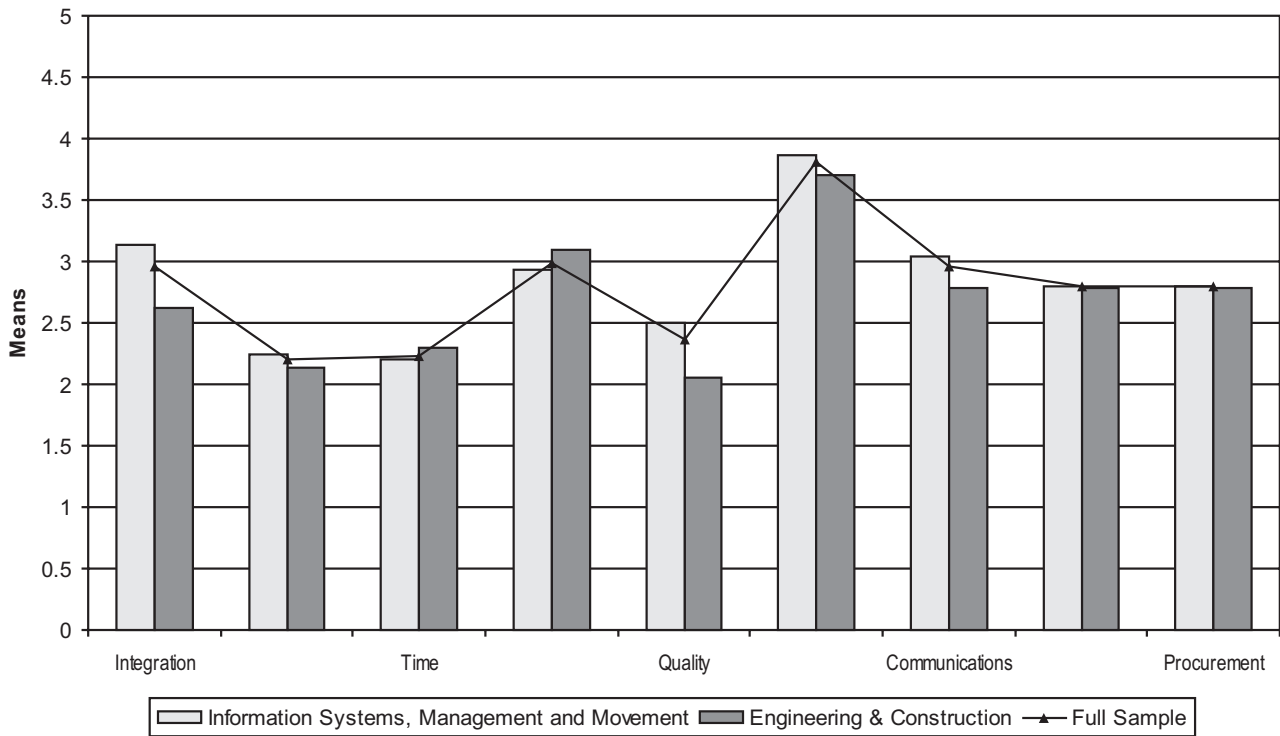
- **Project Management Knowledge:** a test, using the PMI's *A Guide to the Project Management Body of Knowledge (PMBOK Guide)* (1996) as the knowledge standard. The test is based on PMI's Project Management Professional (PMP) exam and is intended to identify the extent of a person's knowledge of formal project management processes and terminology.
- **Performance-Based Project Management Competence:** self assessment against Australian National Competency Standards for Project Management (AIPM 1996).
- **Project Environment:** a questionnaire that establishes the nature of the project environment in which the person normally operates.

- **Qualifications and Experience:** a questionnaire based on PMI's former Qualifications and Experience questionnaire for PMP Certification.

Preliminary Results

By March 1998 data had been collected from over ninety organizations in Australia and the United States. Of these, twenty-four were in the Engineering and Construction industry in Australia, and forty-seven were in the Information Systems, Management, and Movement sector, twenty from Australia, and twenty-seven from the United States, giving a total sample size of seventy-one. The additional cases, from other industries, have not been included in the results reported here. The Engineering and Construction Industry and Information Systems, Management, and Movement samples have been analyzed to provide some very preliminary results and to indicate to stakeholders the type of

Exhibit 3. Project Management Knowledge Areas—Information Systems, Management & Movement and Engineering & Construction, Full Sample, Australia and USA



feedback that can be expected from this project as the databank grows and the research process proceeds.

Qualifications and Experience

Qualifications and experience of individuals and the level of project management awareness within a country or industry sector can be expected to influence the results emerging from this study. From the current data set, a clear pattern emerges. Differences between Australia and the United States are less marked than differences between industry sectors.

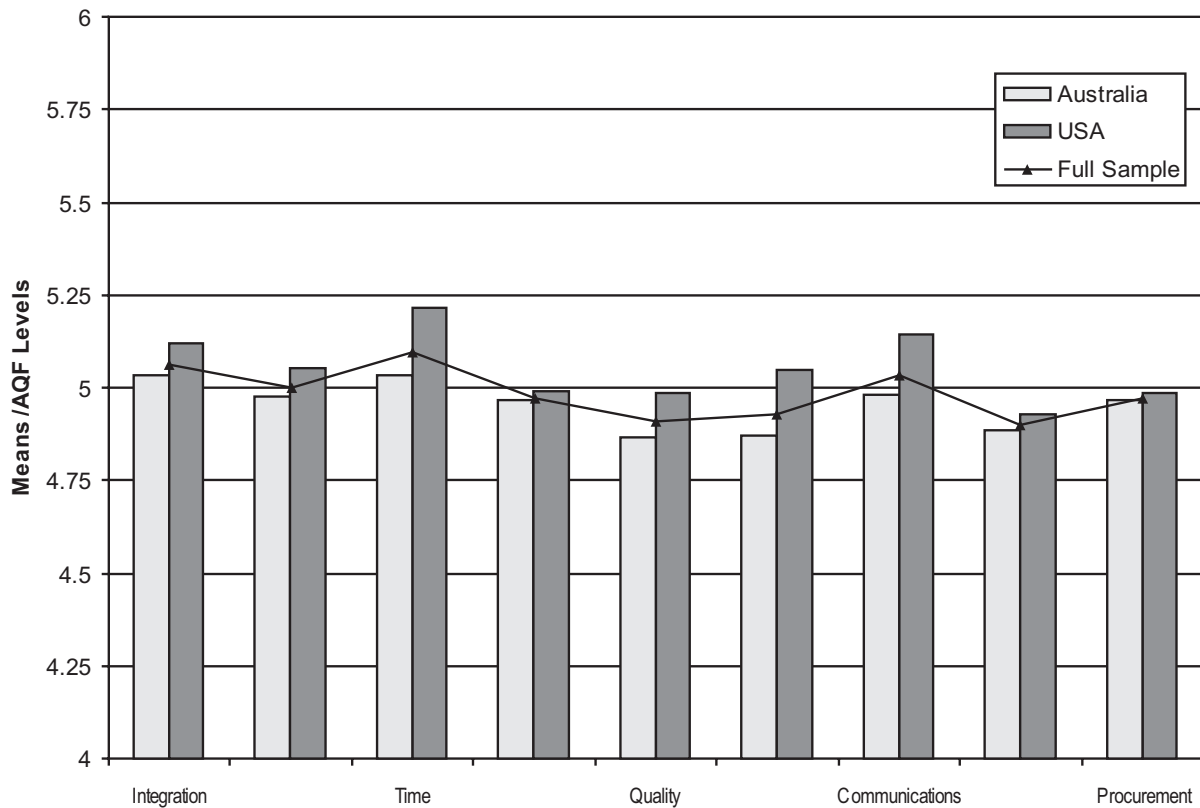
The Information Systems, Management, and Movement sector has more highly qualified project personnel with a higher level of project management awareness than in Engineering and Construction. In the Information Systems, Management, and Movement sample, 72.3 percent of project personnel have first degrees, and 29.8 percent have postgraduate degrees compared with 58.3 percent first degrees and 20.8 percent with postgraduate qualifications in the Engineering and Construction sector.

The extent of attendance at Project Management conferences, seminars, and symposia and participation in Project Management training have been taken as indicators of the level of project management awareness. For the Engineering and Construction industry sample, only 20.8 percent of the sample had attended Project Management conferences, and 33.3 percent had participated in Project Management training in the last six years. This compares with 44.7 percent of the sample attending Project Management conferences and 76.6 percent participating in Project Management training for the Information Systems, Management, and Movement sector. This suggests a far higher level of project management awareness in the Information Systems, Management, and Movement sector.

Project Management Knowledge

As indicated earlier, the data collection instrument used is a multiple choice test, using the PMI's *A Guide to the Project Management Body of Knowledge (PMBOK Guide)* (1996) as the knowledge standard. The test is based on the PMI's Project Management Professional (PMP) exam and is intended to identify the extent of a person's knowledge of formal project management

**Exhibit 4. Project Management—Performance Based Competency—
Full Sample, Australia vs USA**



processes and terminology against that standard. The results for the full sample, the Engineering and Construction and Information Systems, Management, and Movement sectors, and Australian versus United States' samples, at March 1998, are shown graphically in Exhibits 2 and 3.

This instrument was specifically designed to test knowledge of what might be considered project management jargon and key project management techniques, as identified in the *PMBOK Guide* (1996). There has been considerable conjecture that the Guide, having been developed primarily in North America, would not be suitable for use in other parts of the world. It should also be noted that only 17.1 percent of the Australian sample claimed any form of Project Management certification, compared with 40 percent for the United States (U.S.) sample. It is interesting, therefore, that the mean scores for both Australia and the U.S. are so close and understandable that the U.S. scores should be, on the whole, slightly higher.

The similarity of results from the Australian and U.S. samples at this point in the data collection appears to pro-

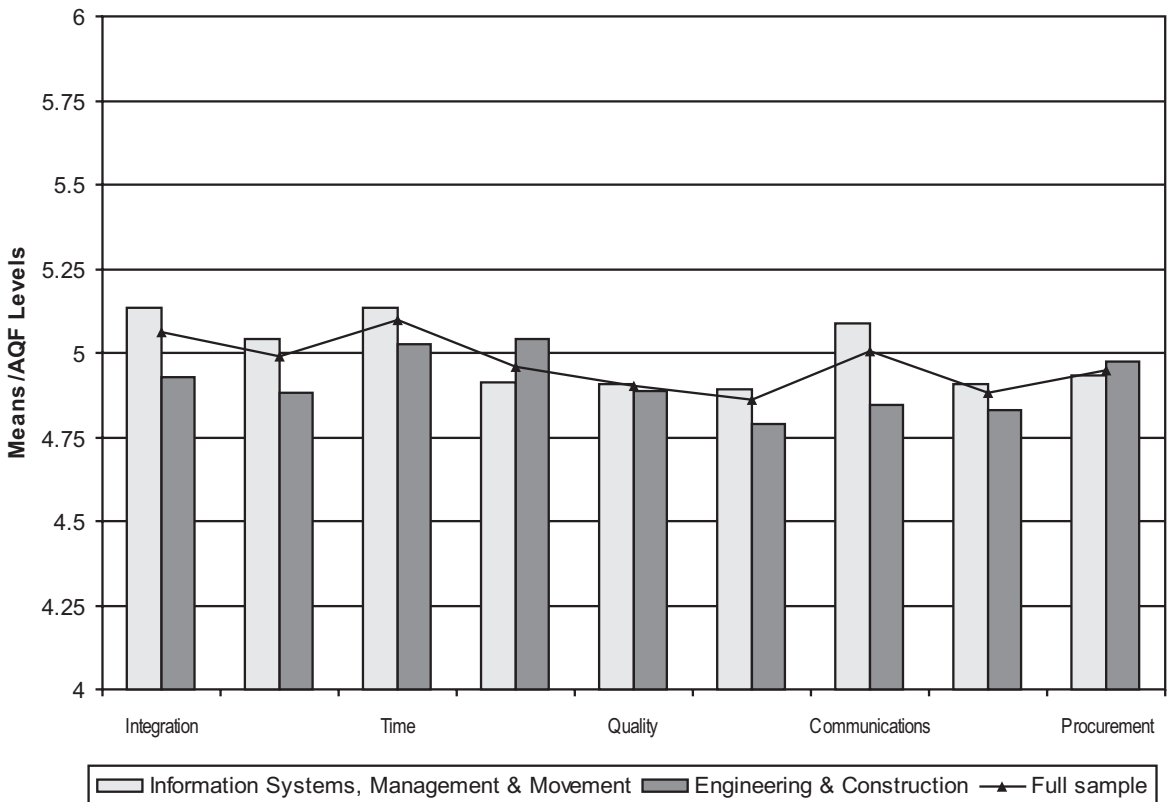
vide support for a globally consistent standard for project management knowledge.

A cross-industry comparison of results between Information Systems, Management, and Movement and Engineering and Construction (see Exhibit 3) presents a similar pattern to that between countries shown in Exhibit 2. Regardless of assumptions of the differences between Engineering and Construction Industry and the Information Systems, Management, and Movement sectors, and the differences in level of qualifications and project management awareness identified at this point in the study, the results for both sectors are remarkably similar, again suggesting support for generic or cross-industry standards.

Project Management—Performance-Based Competency

The data collection instrument used here is a self assessment against the Australian National Competency Standards for Project Management (AIPM 1996). Project personnel were asked to rate themselves, against each of ninety-three project management performance criteria, according to the following scale:

Exhibit 5. Project Management—Performance Based Competency—Full Sample, Information Systems, Management & Movement and Engineering & Construction



- 1 I have never done or participated in doing this.
- 2 I have done or do this under supervision.
- 3 I have occasionally done or do this myself.
- 4 I have often done or do this myself.
- 5 I have done or managed this across multiple projects or subprojects.

It is a requirement of assessment against the Australian National Competency Standards for Project Management (AIPM 1996) that applicants must be able to provide evidence to support all claims of competence. The rating scale was devised on the basis that if a person has **done** something, he will be able to provide evidence, whereas if he **has not done** it, he will not be able to provide evidence. The intention was to ask the question in a manner that would require the least amount of potentially variable judgment on the part of each individual. There are three levels in the Australian National Competency Standards for Project Management (AIPM 1996).

The results from this instrument are presented to indicate the level at which an individual could reasonably apply for assessment against Competency Standards. The

three levels roughly correspond to the following project management roles:

Level 4: Project team member or specialist.

Level 5: Project manager of a fairly well defined project or subproject.

Level 6: Project or program director responsible for multiple projects or a portfolio of projects.

In interpreting results, an individual with a result between 4 and 4.75 should consider applying for assessment at Level 4; between 4.75 and 5.75, at Level 5; and above 5.75, at Level 6. The results for the full sample disguise performance at both upper and lower levels. The Standard Deviation across the Units varied from .38 for Project Integration to .46 for Quality.

It can be noted that although the instruments used for collection of data on project management knowledge and performance-based competency are quite different, the pattern of results from both instruments are remarkably similar. Interesting differences are:

- Time performance is relatively stronger than Time knowledge.

- Cost performance is relatively weaker than Cost knowledge.
- Human Resource Management performance is relatively weaker than Human Resource Management knowledge.
- Australian Human Resource Management performance is lower than that for the U.S., although the reverse is true for knowledge.

Looking at cross-industry profiles, differences between results for the Information Systems, Management, and Movement sector and for Engineering and Construction are more marked for performance (see Exhibit 5) than for knowledge (see Exhibit 3). The stronger performance of the Engineering and Construction sector in both Cost and Procurement may in part be explained by results from the Project Environment Questionnaire, which indicate that 91.7 percent of the Engineering and Construction industry sample have clients external to their organization, while only 45.7 percent of the Information Systems, Management, and Movement sector have external clients.

The Information Systems, Management, and Movement sector may place more emphasis on communications than is the case in Engineering and Construction projects because, of those in the Engineering and Construction sector sample, 79.2 percent reported that goals were clearly defined at the start of projects and 78.3 percent reported that methods were well defined, compared with 55.3 percent for well-defined goals and 60.9 percent for well defined methods in the Information Systems, Management, and Movement sector. This supports the Goals and Methods Matrix for project classification proposed by Turner and Cochrane (Turner 1993).

Conclusions

The research results published here are preliminary only and should be treated with extreme caution. However, at this point in the study and subject to further more detailed analysis, there appears to be some support for the feasibility of generic (cross-industry), global project management standards, primarily due to the apparent similarity of results from a comparison between two industry sectors, Information Systems, Management, & Movement and Engineering and Construction, and two countries, Australia and the United States. Analysis of data from a wider range of industry sectors and countries is required to explore this further.

It should be noted that the standards used are at a fairly high level and leave ample scope for customization at local levels, to accommodate national regulations, practices, and cultural differences where required.

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