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Skulmoski, Gregory James; Hartman, Francis T.; DeMaere, Roch

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## Superior and Threshold Project Competencies

Greg Skulmoski  
University of Calgary  
Department of Civil Engineering  
Project Management Specialization  
2500 University Drive NW  
Calgary, Alberta, Canada  
T2N 1N4  
(403) 220-2875 Office  
(403) 282-7026 Fax  
gjskulmo@ucalgary.ca

Francis Hartman  
University of Calgary  
Department of Civil Engineering  
Project Management Specialization  
2500 University Drive NW  
Calgary, Alberta, Canada  
T2N 1N4  
(403) 220-2875 Office  
(403) 282-7026 Fax  
fhartman@ucalgary.ca

Roch DeMaere  
University of Calgary  
Department of Civil Engineering  
Project Management Specialization  
2500 University Drive NW  
Calgary, Alberta, Canada  
T2N 1N4  
(403) 220-2875 Office  
(403) 282-7026 Fax  
rwdemaer@ucalgary.ca

# Superior and Threshold Project Competencies

## ABSTRACT

Increasingly, people are managing business using project management tools, techniques and processes. Many people in the project management community are concerned about which competencies people involved should possess. To date, most of the research has focused on the skills and knowledge project managers require. The research reported here investigated "soft" competencies. Specifically, what soft competencies do superior and average project managers and project participants possess? A Project Competency Profile was developed that details competencies common to project personnel, and those competencies possessed by superior project managers and superior project participants.

Key Words: Competence, Skills, Project Manager, Project Management, Project Success.

## INTRODUCTION

Project management is perhaps more about managing project participants, than managing projects. After all, it is project participants who perform the work required for the successful completion of a project. Managing a project team can be problematic since its composition is made up of unique individuals with differing competencies. Some team members may be average performers, while others may be superior. Indeed, the project manager's competencies may vary as well. The purpose of the research reported here was to uncover which competencies are possessed by superior project participants and project managers, and which competencies are possessed by average project participants and project managers. Understanding threshold and superior project competencies can improve our insight into which competencies are desirable for project participants and project managers to possess.

## PROJECT MANAGEMENT COMPETENCE

As the project management community expands, so do its research directions. One area that is increasingly of interest to researchers and practitioners alike is project management competence. Understanding project management competence is important because it is related to the effectiveness of project management (Crawford, 1998); project success (Jiang et al., 1996; and Lechler, 1998), and the competitiveness of the organization (Frame, 1999).

Understanding project competencies is important for other reasons as well: 1) Economics of competency - Frame (1999) explains the importance of competence from an economic perspective for both individuals and organizations in the project setting. In the current business environment, where competition is a key element, the economic survival of individuals and corporations depends upon their competence. Since more business activities are consciously organized as projects, project management competence becomes a core competence for individuals, teams, and organizations (Hartman and Skulmoski, 1998; Frame, 1999; and Hartman and Skulmoski, 1999). 2) Project management is a core competency - Peters (1998), Dinsmore (1999), Frame (1999) and others suggest that in the current business environment, most working people need project management competencies. 3) Competency applied - Hartman and Skulmoski (1999) identify many ways in which understanding competencies can be applied in projects such as guiding recruitment and performance assessment, human

resource allocation, and training. Understanding project management competencies is important.

## **Project Roles**

Many have examined the competency of project managers (Gaddis, 1959; Thamhain, 1991; Kerzner, 1996; Morris et al., 1998; Crawford, 1999; and, Frame, 1999). Competency research is expanding to consider competencies for project roles other than the project manager (Hartman and Skulmoski, 1999). Gareis and Huemann (1999) identify the following project roles: project owner, project manager, project assistant, project team member, and project contributor. Frame (1999) suggests that there are many different roles played in projects, and the individual in those roles also needs to be competent project participants. Frame (1999) has identified the following project roles: the project manager, the sponsor, technical personnel, functional managers who may oversee the technical efforts of the technical personnel, and support staff. Sub project leaders, middle and upper management, coaches and consultants also contribute to projects and may be considered to have formalized roles in projects (Friess 1999). Kerzner (1998) identifies a broad range of project roles: project administrator, project coordinator, technical assistant, task manager, project engineer, assistant project manager, project manager, program manager, executive program manager, director of programs, and vice president of program development. Others, for simplicity purposes, have bifurcated project roles into the project manager and project participant (Skulmoski, 1999).

Many project roles exist; however, the majority of project management competency research has been focused on the skills and knowledge of a project manager. Prior research has greatly improved our understanding of the skills and knowledge “competent” project managers require. The pioneering work of Thamhain (1991), Pinto (1995), Turner (1997), Morris (1998), and Crawford (1999) have built a solid base for competency research in new areas. Currently, we do not know very much about “soft” competencies, such as traits, motives, attitudes and behaviors, nor do we fully understand how they are related to project performance and success for any of the project roles. We do not know what distinguishes superior from average project managers. We do not know if project managers and project participants require the same competencies to be successful in projects.

### **The Neglected Project Participant**

To date, much of the project management competency research has been directed toward project managers even though there are many other project roles. An opportunity seems to exist in understanding project participant competency; after all, it is the project participant(s) that contributes most to completing project work. While the project manager manages a project, it is the project participant(s) who undertakes and completes project activities. We do not know very much about project participant soft competencies.

## Research Focus

Since very little is known about soft competencies for those involved in projects the purpose of the research reported here is to answer:

1. What soft threshold and superior competencies do project managers possess?
2. What soft threshold and superior competencies do project participants possess?

*Threshold Competencies:* Threshold competencies are those competencies that a person requires in order to complete one's tasks at a minimum and acceptable level of performance. That is, what soft competencies are required by a project participant in order to maintain their employability on projects? Understanding threshold competencies is important because these competencies distinguish between acceptable and unacceptable project performers. As a bare minimum, people involved in projects require threshold competencies in order to add value to their projects.

*Superior Competencies:* Superior competencies are those competencies that distinguish superior or world-class performers from average performers. Which project competencies do only the very best people possess? (It is assumed in this research that superior performers also possess threshold competencies; if they lacked threshold competencies, then by the definition of threshold competencies, superior performers would not perform at a minimally acceptable

level of performance.) Gaining insight into superior competencies can help guide recruitment and selection processes, coaching and training, and organizational project management policy development. If we understand which competencies superior project performers possess, then we can explicitly recruit, select, train and nurture these competencies.

## **METHOD**

The data-gathering environment - two conferences - was not suited for time consuming research instruments such as in depth questionnaires or interviews because the focus of conference attendees' was to attend presentations rather than be dragged away for an hour of questioning. For the research reported here, conference attendees' professional opinions were captured during breaks in the proceedings. At that time, conference attendees' focus turned to attending the tradeshow, networking with colleagues, and of course, consuming refreshments. Therefore, data collection in such an environment had to be quick with minimal intrusion.

### **Instrument**

The problem was how to quickly capture data. For this reason, a one page, two-sided data collection instrument was narrowly focused on threshold and superior competencies for two types of project roles and contained a winnowed list of twenty competencies. The survey instrument for this pilot project is like a point



and shoot camera; rather than using a sophisticated, professional camera and lighting system, a good quality photo of an event can be taken with a point and shoot camera. While there are trade-offs between the two systems, the advantage of a point and shoot camera system is the ability to quickly and unobtrusively take good photos. A professional camera and lighting system will capture subtleties of texture and tonal range but will require significantly more time of both photographer and subject for a great photo. The survey instrument was designed to quickly capture survey participants' opinions about project competencies. Four major elements comprised the instrument.

*1) Competencies Investigated:* Project management competencies contributing to successful task performance and project success have been proposed and discussed in the literature. A winnowed list of competencies specific to the project environment and prescribed for general success in business task performance is summarized in Table 1. The list is illustrative and weighted towards soft competencies. A subset (indicated in bold and at the top of each column) was used in this study as the basis to identify which competencies research participants deemed important in projects. Competencies in italic and appearing at the bottom were cited in the literature but not included in this study. A two step process was used to distill a large competency list to one that was practically shortened to fit the demands of the data-gathering environment (see below). The survey instrument included competencies that reappeared in other

researcher's list of "important" project competencies, like risk taking and communication.

Competencies Summary							Note: Competencies in <b>Bold</b> were included in this study.
Jacobs (1989)	Jackson (1989)	Teo (1996)	Hartman & Skulmoski (1999)	Lepak (1999)	Robertson (1999)	Wideman (1999)	
<b>Self-organization</b>	<b>Concern for impact</b>	<b>Ability to communicate</b>	<b>Creativity</b>	<b>Commitment</b>	<b>Analysis</b>	<b>Delegation</b>	
<b>Delegation</b>	<b>Control</b>	<b>Risk taking</b>	<b>Innovation</b>	<b>Compliance</b>	<b>Judgement</b>	<b>Effective communication</b>	
<b>Short term planning</b>	<b>Proactivity</b>	<b>Planning skills</b>	<b>Open communication</b>		<b>Decision making</b>	<b>Sensitive</b>	
<b>Sensitivity</b>	<b>Achievement drive</b>		<b>Trust</b>		<b>Creativity and innovation</b>	<b>Analytical</b>	
<b>Persuasiveness</b>	<b>Business know-how</b>		<b>Risk taking</b>		<b>Planning and organizing</b>	<b>Committed</b>	
<b>Decisiveness</b>			<b>Ownership of tasks</b>		<b>Communication skills</b>	<b>Proactive</b>	
<b>Judgement</b>					<i>Interpersonal sensitivity</i>		
<b>Problem analysis</b>	<i>Critical Reasoning</i>	<i>Computer literacy</i>			<i>Resilience</i>		
	<i>Strategic Visioning</i>	<i>Recognition of team</i>			<i>Energy</i>		
	<i>Confidence</i>	<i>Budgeting</i>			<i>Initiative</i>	<i>Independent</i>	
	<i>Flexibility</i>	<i>Willingness to listen</i>			<i>Comercial awareness</i>	<i>Responsive</i>	
	<i>Direction</i>	<i>Quality maintenance</i>			<i>Specialist knowledge</i>	<i>Take responsibility</i>	
	<i>Motivatin</i>	<i>Decision making</i>			<i>Action orientation</i>	<i>Willingness to compromise</i>	
	<i>Interpersonal Skills</i>	<i>Ability to gain cooperation</i>			<i>Persuasiveness</i>	<i>Confident</i>	
	<i>Persuasion</i>	<i>Ability to manage conflict</i>			<i>Leadership</i>	<i>Self-starting</i>	
	<i>Influence</i>	<i>PM knowledge</i>			<i>Quality orientation</i>	<i>Imaginative</i>	
	<i>Concern for effectiveness</i>	<i>Ability to meet deadlines</i>			<i>Flexibility</i>	<i>Courageous</i>	
				<i>Collaborative</i>			
				<i>Market sensitive</i>			

Table 1 Competencies Literature Review

Additional competencies were added to the table, which reflected the researchers' curiosity to probe other competencies, such as trust. The list of competencies appearing on the project manager page of the instrument was randomly sorted, while the project participant competencies were sorted alphabetically so as to increase validity.

2) *Project Roles*: Project roles, for simplicity purposes, were bifurcated into the project participant and the project manager. While other project roles exist (i.e. sponsor, program manager, project assistant, etc.) only the competencies relating to the project manager and a generic project participant were targeted. Project manager data was collected on page one of the survey instrument, and project participant data was collected on page two.

3) *Threshold and Superior Competencies*: Threshold and superior competencies were investigated. For both the project manager and project participant, survey participants were asked to rank threshold and superior competencies. They were given detailed instructions on how to complete the survey.

4) *Instructions*: Research participants were asked to rank the top five most important competencies from the list (bolded competencies in Table 1) where 1 is the most important and 5 the least important competency of that list of five. For each role, they were asked to rank the competencies that average performers required in order to "keep their job, and that if they did not have these competencies they would not perform at an acceptable level." These are threshold competencies. They were also asked to rank the competencies that superior performers possessed. As well, the research participants were instructed that the two sets of competencies for superior and threshold competencies were mutually exclusive. They are mutually exclusive since the superior project participant or superior project manager will likely possess threshold competencies as well as superior competencies. Research participants were shown that the two-sided instrument was similar on each side, except that each side of the instrument focused on one project role: the project participant and the project manager. Key terms such as *superior competencies* and *project participant* were described to the research participants. The research participants were asked for their professional opinion and informed of their right not to participate and right to withdraw at any time. The survey administrator also

answered any questions about the instrument. The instrument was given to interested conference attendees and returned to the author. Thus, four sets of data were collected: project participant threshold and superior competencies, and project manager threshold and superior competencies.

### **Sample**

Research participants were conference attendees at either the 43<sup>rd</sup> Annual Meeting of the Association for the Advancement of Cost Engineering (AACE) International in Denver, Colorado (June 27 – 30, 1999) or at the Construction and Engineering Leadership Conference in Calgary, Alberta (May, 17 - 18, 1999). In the trade show area, conference attendees were randomly approached and asked if they would participate in a brief survey.

## **RESULTS**

Descriptive statistics were used to analyse the results. Seventy-five surveys were distributed, fifty-two returned, and forty-six were valid. There were six invalid responses. For each competency (i.e. commitment) the number of responses for each rank were summed and the mean determined (see Table 2). For both project participant and project manager, threshold and superior competencies were tabulated.

Commitment was ranked the number one project participant threshold competency (Table 2) from the list of twenty competencies (Table 1). Other high ranking threshold competencies that were thought to be possessed by project participants include ownership of one's tasks, self-organization, open communication, trust, and problem analysis. (Lower ranking responses are not reported in this paper.)

Competencies by Role and Type					
			<i>PPT = Project Participant</i>	<i>PMr = Project Manager</i>	
<u>PPT Threshold Competencies</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>PPT Superior Competencies</u>	<u>Mean</u>	<u>Std. Dev.</u>
Commitment	1.98	1.94	Creativity	2.02	2.02
Ownership of Tasks	1.78	2.03	Proactivity	1.33	1.90
Self-organization	1.46	1.81	Open Communication	1.26	1.94
Open Communication	1.15	1.74	Achievement Drive	1.20	1.69
Trust	1.11	1.84	Results Oriented	1.11	1.65
Problem Analysis	1.11	1.77	Problem Analysis	0.91	1.63
Results Oriented	0.80	1.51	Judgement	0.91	1.52
Business Know-how	0.80	1.60	Trust	0.91	1.55
Judgement	0.76	1.42	Business Know-how	0.87	1.51
<u>PMr Threshold Competencies</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>PMr Superior Competencies</u>	<u>Mean</u>	<u>Std. Dev.</u>
Open Communication	1.57	1.98	Creativity	1.72	1.86
Problem Analysis	1.28	1.85	Open Communication	1.61	2.06
Trust	1.20	1.98	Proactivity	1.46	1.85
Business Know-how	1.17	1.60	Decisiveness	1.24	1.74
Delegation	1.15	1.59	Trust	1.17	1.84
Judgement	1.11	1.65	Judgement	1.09	1.90
Self Organization	1.11	1.69	Delegation	0.91	1.67
Commitment	1.07	1.77	Results Oriented	0.89	1.55
Ownership of Tasks	0.78	1.69	Achievement Drive	0.74	1.51

Table 2 Survey Results

The results illustrate the threshold and superior competencies superior and average project managers and project participants possess. Upon further examination of the data, patterns began to emerge.

### Meta-Competencies

Meta-competencies are those competencies that average and superior

performing project participants and project managers possess (Figure 1). The survey participants responded in such a way that a set of competencies ranked high for both project roles. Meta-competencies were identified by a high response rate with a

comparatively flat competency curve across project roles.

The research participants indicated most strongly that open communication was an

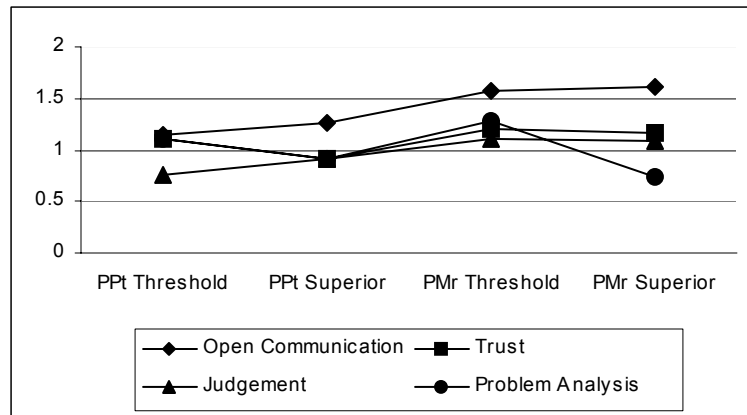


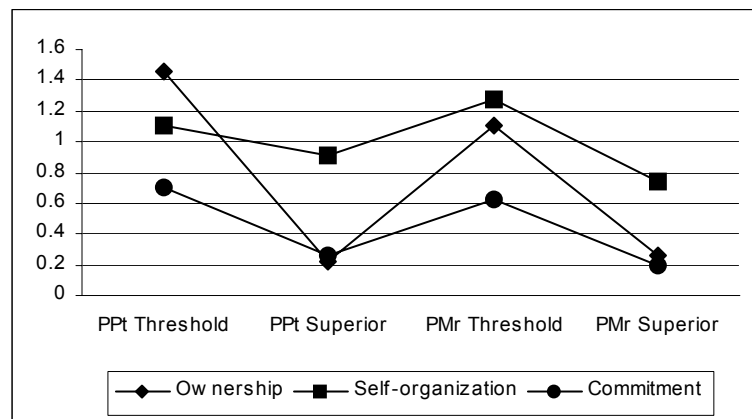
Figure 1 Meta-Competencies

important meta-competency to possess, regardless of project role. Open communication has qualities of a trait as well as a skill. Those skilled in effective communication are more successful in the communication process. On the other hand, open communication relates to what information we share (Hartman, 2000). Fears and frustrations, hidden agenda, financial and political information are types of information not typically shared in projects, but may be communicated if one has an open view of project information. Thus, open communication can also be considered a trait since it influences the type and detail of information shared when one communicates. Trust, judgement and problem analysis were the other meta-competencies that were identified in the study.

## General Threshold Competencies

Threshold competencies are illustrated in Table 2 for both project participant and project manager roles. A subset of those threshold competencies - general threshold competencies - can be identified. General threshold competencies are those competencies where a large separation of ranking occurred between average and superior performers for both project participants and project managers. The research results suggest that certain threshold competencies - general threshold competencies - were common for average performers in both project roles identified in

the study; that is, they were thought to be "generally" possessed by both average project managers and average project participants.



Superior project managers and project participants were not distinguished by these competencies: the survey participants ranked the general threshold competencies low for both superior project managers and superior project participants. General threshold competencies were ranked low for superior performers because survey participants were instructed that superior performers possessed threshold competencies; they would not be superior if they did not possess the competencies required for minimally acceptable performance (threshold

competencies). Ownership of one's work, self-organization, and commitment are thought to be general threshold competencies. The self-organization competency weakly distinguished average from superior performers.

### General Superior Competencies

Superior competencies were identified in this study as those competencies that had a wide range of response that distinguished superior from average performers. Again, a subset of general competencies was identified in the superior competency data set (Figure 3). Both superior project managers and superior project participants possessed general superior competencies.

However, average project managers and average project participants lacked the general superior competencies. Creativity appears to be the most important general superior

competency that distinguished superior from average performers for both roles. Proactivity and the achievement drive

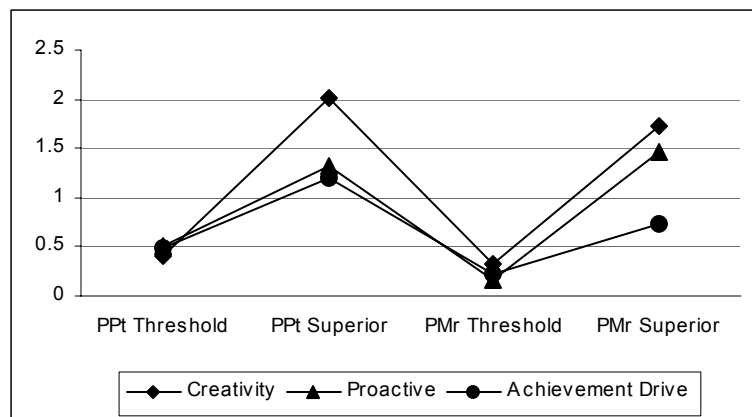


Figure 3 General Superior Competencies

were also identified as general superior competencies.



## DISCUSSION

The results suggest that both project participants and project managers share a core foundation of soft competencies. The Project Competency Profile (Figure 4) illustrates how those competencies might be arranged based on the data. It is comprised of meta-, general threshold, general superior, project participant superior and project

manager superior competencies. Both the project manager and project participant roles can be mapped to the competencies.

Project Participant Superior Competencies <i>Business Know-how</i> <i>Problem Analysis</i>	Project Manager Superior Competencies <i>Decisiveness</i> <i>Delegation</i>
General Superior Competencies <i>Creative, Proactive, Achievement Drive</i>	
General Threshold Competencies <i>Ownership Of One's Tasks, Self-Organization, Commitment</i>	
Meta Competencies <i>Open Communication, Trust, Problem Analysis, Judgement, Results Oriented</i>	

Figure 4 Project Competency Profile

Project participants and project managers, according to the survey results, require a foundation of meta-competencies such as open communication and trust. Average project participants and project managers may also require general threshold competencies like ownership of one's tasks and self-organization. Meta- and general threshold competencies form the core competencies for most people involved in projects; since very few people perform at the superior or world class level, the remaining people involved in

projects will likely perform at a level lower than their superior counterparts. Thus, those involved in projects should possess meta- and general threshold competencies.

In addition to the meta- and general threshold competencies, superior project performers are likely to possess general superior competencies like creativity and proactivity. The general superior competencies distinguish superior project personnel from average performers. Finally, superior project participants and project managers also have role specific competencies. Superior project participants have business know-how and problem analysis competencies. Both of these competencies are specific to superior project participants and do not distinguish superior project managers. Superior project managers also had competencies that superior project participants generally do not have: decisiveness and delegation. Both superior project participant and superior project manager competencies were somewhat weakly identified in this study and additional research is required in order to ascertain with increased confidence that the superior competencies listed here are indeed possessed by superior project personnel.

The competency profile helps to explain soft competencies and the distinguishing competencies of superior and average performers. With this knowledge, the competency profile can provide guidance for many project activities such as recruitment and selection, team formation, training, and competency based

compensation. People involved in projects may not have all the competencies of a superior performer but may actually deliver world class results. They may possess enough threshold and superior competencies to consistently deliver high quality results. At this point, we do not understand the relationships between the competencies. For example, does open communication lead to trust? More research is required.

As with most studies, the results from this pilot study are subject to some limitations. The time constraints to collect data did not easily lend themselves to collect demographic data. We do not know from which industries the survey participants came from. We do not know the types of roles and functions they perform in projects. An opportunity exists to segment soft competencies required by project type. For example, are all the meta-competencies required for all sizes of projects or for projects of different complexities? Project type might be an important construct to introduce to any future competency studies. Decomposing the project participant role from a singular and generic role, to sub-categories of the project participant role (i.e. project sponsor, project administration, etc.) might also uncover role specific competencies.

## **CONCLUSION**

Soft project management competence is more complex than might be suggested in this paper. This exploratory study revealed that the competencies required by

project managers and project participants are different for both average and superior performers. All those who participate in projects require meta-competencies. General threshold competencies were identified which project personnel need to possess in order to perform their tasks at a minimally acceptable level. General superior competencies are those that both superior project participants and project managers possess. Finally, there are competencies unique to superior project participants and unique to project managers.

This research served two purposes. First, it investigated a subset of project management competence - soft competencies - which have not appeared in the extant project management literature. Even the most skilled project participant, with a deep understanding of the project management body of knowledge might under perform if he lacks soft competencies such as the achievement drive. Soft competencies seem to be important. Second, it identified a tiered Project Competency Profile that can be practically applied in many project activities such as recruitment and training.

While new information about project competencies were revealed in this study, this is only a starting point in understanding soft competencies in projects. More research, both qualitative and quantitative, promises to uncover the multidimensionality of project competence. A grounded theory method may further our understanding of the multidimensionality of project competence as it

relates to project performance. The strengths of these relationships may be uncovered by quantitative research. Improving our understanding of project competence should improve project performance and the probability of project success.

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