

A Study of Project Management Job Descriptions

Kai S. Koong
koongk@utpa.edu

Lai C. Liu
liul@utpa.edu

Computer Information Systems and Quantitative Methods Department
The University of Texas Pan American
1201 West University Drive
Edinburg, TX 78541, USA

Abstract

Using a leading placement portal, 150 project management job descriptions were examined. Specifically, this study reports on the demographic location of these openings, the type of project management skills required, variety of software mastery and other placement attributes that are desirable of candidates. While the dispersion of project management job openings was found to be fairly equal by regions, most of the jobs were found in the larger as well as more advanced technologically advanced states. When the skills requirements were assessed using the nine knowledge areas of project management, four of them were found in less than 50 percent of the job descriptions. MS Project was the dominant software indicated but it was found in less than 50 percent of the job postings. Most of the jobs do require some prior experience and prefer that the candidate has some type of certification. However, it is clear from this study that the job of project management can mean different things to different companies.

Keywords: Knowledge area, Project Management, Competencies

1. INTRODUCTION

The failure of any project to reach its goal is usually regarded as a failure of the management of that project (Schmitt & Kozar, 1978, p. 9). Most failures were due to management's inability to control, organize, and plan, which is to say, manage (Schmitt & Kozar, 1978). For this reason, every project manager should exhibit knowledge in the nine knowledge areas in order to be well qualified. These areas are integration management, scope management, time management, cost management, quality management, human resource management, communications management, procurement management and risk management.

According to the 2003 CHAOS Report by the Standish Group, US companies invested "\$255 billion in project spending" (CHAOS Report, 2003). Each project is overseen by a project manager who is responsible for working with the project sponsor, the project team, and the other people involved in a project to meet project goals. Obviously, a project's failure or success can be affected by a variety of factors. For example, according to a study of 20 MIS projects in 10 firms, it was found "that formalized project control systems were negatively related to project success," while the "lack of any plan or direction is as detrimental as a strict *frozen* development plan" (Schmitt & Kozar, 1978). However, when it comes to accountability, hundreds of practicing team members and project managers from their Fortune 500 clients indicated that the project

manager is most likely to be held responsible for the ultimate outcome" of a project (A PCI Global Survey, 2004).

It is common knowledge by now that effective leader behavior is one of the few constraints associated with high-performance organizations (Longenecker & Scazzero, 2003). In the case of project management, it can be said without any reservation that team leadership is vital to the successful performance of a project team (Heberling, et. al., 2001). Unfortunately, while there are lots of project managers around, finding the ideal candidate is not always easy (Hyatt, n.d.). Competent project managers are mission critical to the firm particularly in the case of a failing project. This is because projects that are failing have the tendency to take on a life of its own, continuing to absorb valuable resources without reaching its objective (Keil, 1995). It is the project manager's responsibility to prevent this situation from occurring. In short, it is the project managers' skills that can determine if a project contributes to profitability or becomes a horror story (A PCI Global Survey, 2004).

2. STATEMENT OF THE PROBLEM

According to CHAOS Report that is published by the Standish Groups, project failures can cost companies a lot of money. Based on some 13,522 information technology projects, it was found that the lost dollar value for US project in 2002 is estimated at \$38 billion with another \$17 billion in cost overruns for a total project waste of \$55 billion" (CHAOS Report, 2003). Surprisingly, project failures are actually quite widespread in organizations of all sizes worldwide, including Fortune 500 companies. Projects may be abandoned for any combination of factors including cost overruns and/or schedule slippages, technological inadequacies, and behavioral, political, or organizational issues (Ewusi-Mensah & Przasnyski, 1991). In most cases, it was found that project managers are the reason for most of the project failures because some 64.5% of project managers have little or no formal training in project management (Mullaly, 2003).

3. STATEMENT OF THE OBJECTIVE

While it is understood that one of the reasons projects are failing is caused by the lack of formal training, a good starting point is to study what are the responsibilities of project managers and what skills are required or expected of them. Once this information is identified, it will then be possible to develop pertinent skills or knowledge areas that may help project managers perform better. This study examines project management job postings from various companies across the country. Specifically, all the project management jobs extracted are from the information technology area. Aside from the demographic locations of the job postings, this research studies the type of project management knowledge areas, software competencies, prior work experiences, and certification requirements indicated by companies.

The results of this study should be of direct and major interest to human resource administrators, information technology consultants, career counselors, computing staff recruiters, corporate budget managers, executive placement agencies, temporary job agencies, information systems analysts, and economic forecasters. Individuals working with governmental agencies such as the Department of Labor, the Immigration and Naturalization Services, and labor attorneys will also find this study useful. Finally, computer science as well as computer and management information systems graduates, students, and faculty should find the results of this study beneficial for making career and curriculum related decisions.

4. METHODOLOGY

The targeted population for this study is the job postings placed for information technology project manager positions through Monster.com. Job advertisements represent the primary recruitment vehicle for companies who are looking for qualified employees (Keil, 1995). Monster.com is regarded as the best job posting web site with 5.7 million unique monthly visitors (tmp.worldwide, p. 1). Most important, this web site was used because it has the largest

number of job posting that spanned all over the country.

Given the large population of job postings, it was necessary to reduce the number of observations to a manageable number. Statistical sampling was thus used to choose a part of a population of interest for inspection (Schwalbe, 2006). With an acceptable error of .08 and a 95% confident level, the sample size was computed to be 150.

Apart from the geographical locations gathered about the listed job postings, the variables selected for this study include the 9 key competencies that all project managers should have, various software skills required, years of experience desired, and certifications. The 9 key competencies are integration management, scope management, time management, cost management, quality management, human resource management, communications management, procurement management and risk management.

Data was collected weekly over a period of 15 weeks. Each week, a total of ten new jobs were randomly selected from the job portal, Monster.com. The data set was organized into six different tables, namely:

1. Geographic Location of Job Postings by Regions and Divisions
2. Project Management Key Knowledge Areas Requirements
3. Years of Prior Experiences
4. Certification Requirements.

Based on the categories and logical sub-attributes, the raw data was tallied and summarized. Next, simple descriptive statistics were generated to show the distribution as well as the dispersion and behavior of the information gathered. Finally, the data set was also sorted (where appropriate) to examine for trends and other clustering that are unique and which may convey implications.

5. FINDINGS

One hundred and fifty job postings were gathered during the 15 week period. All of the cases extracted were useful and included in the sample studied. In other words, the number of valid cases was 100 percent. The

geographic breakdown of the 150 job postings by region and by division are presented in Table 1. One hundred and forty-five of the jobs were traceable to a region. In other words, a little over 3 percent of the jobs could not be classified by geographic location. The good news is project management jobs can be found in all four regions and in all 9 divisions. The South and the Western regions have about the same number of project management jobs listed. Together, these two regions listed about 62 percent of all the jobs extracted. The Midwest region had the least number of project management jobs, only 17 positions. The top region where project management jobs were found was in the IX or Pacific Division (Alaska, California, Hawaii, Oregon and Washington), accounting for 22 percent. The South Atlantic Region (Delaware, District of Columbia, Florida, Georgia, North Carolina, South Carolina, Virginia and West Virginia) was a close second with about 21 percent of all the jobs

Table 1. Geographic Location of Job Postings by Regions and Divisions

Region/Division	Hits	Percentage
Region I Northeast	35	
Division I	11	7.33%
Division II	24	16.00%
Region II Midwest	17	
Division III	13	8.67%
Division IV	4	2.67%
Region III South	48	
Division V	31	20.67%
Division VI	1	0.67%
Division VII	16	10.67%
Region IV West	45	
Division VIII	12	8.00%
Division IX	33	22.00%
N/A	5	3.33%
Total	150	

Based on the raw tally, California, Virginia, Texas, New York and Illinois were the top five states that posted the most number of jobs. These were the only states that have jobs in the double digits. Together, these

five states posted 86 jobs or some 57 percent of the total number of postings. Interestingly, project management jobs were found in 25 states only. Most of these states have fairly large populations and metropolitan areas. In addition, they also constitute the states where their citizens are more advanced technologically.

As can be seen in Table 2, scope and time management were the only two key knowledge areas that were found in at least 75 percent of all the job postings. Integration and cost management were found in at least 60 percent of the descriptions. Finally, Communication was the only other key knowledge area that was listed in at least half of all the jobs examined. Human resource, risk, procurement and quality management were at the bottom four types of knowledge areas that appeared in less than 50 percent of the jobs. Quality management was the lowest indicated project management knowledge area. This knowledge area was required in a mere 16 percent. Put simply, the results show that some skills are considered more important than others.

Table 2. Project Management Key Knowledge Areas Requirements

Skills	Total	Percent	Rank
Scope Management	125	83.33	1
Time Management	118	78.67	2
Integration Management	98	65.33	3
Cost Management	93	62.00	4
Communication	78	52.00	5
Human Resource	69	46.00	6
Risk Management	43	28.67	7
Procurement Management	40	26.67	8
Quality Management	25	16.67	9

Over 75 percent of the job postings require that the candidate have at least 2 years of work experience. The majority of the jobs descriptions indicated that the candidate should have 2 to 6 years of prior experience.

Given the clustering of the data set, it is pretty clear that most project management jobs are not entry level positions. Other details pertaining to prior job experiences are presented in Table 3.

Table 3. Years of Prior Experiences

Work Experience	Required	Percent	Rank
None	17	11.33%	3
0-1 Year	15	10.00%	4
2-6 Years	84	56.00%	1
7 or More Years	34	22.67%	2
Total	150	100 %	

As can be seen in Table 4, some 60 percent of the job posted did not require any type of certification. The rest of the jobs that require certifications can be placed into 6 categories. Project management institute (PMI) was indicated in about 24 percent and project management professional (PMP) in about 22 percent of the jobs. Five jobs required Six Sigma certifications.

Table 4. Certification Requirements

Certification	Required	Percent	Rank
None	88	58.67%	1
PMI	36	24.00%	2
PMP	33	22.00%	3
Six Sigma	5	3.33%	4
SAP	3	2.00%	5
ASAP	2	1.33%	6
MSCE	1	0.67%	7

6. CONCLUSIONS AND IMPLICATIONS

Using a random sample of 150 job posting that were extracted from Monster.com, this study found a number of interesting trends. First, while it is true that project management jobs can be found in every region as well as division of the country per Census definition, the proportion of jobs available is quite different. Most of the jobs are found in the South as well as in the Western regions. Actually, the 150 jobs are found only in about half of the country. A majority of the jobs are found in California,

Virginia, Texas, New York and Illinois. Overall, it can be said that these are the states that are known to have more metropolitan cities as well as technological advanced populations. States that are high in the digital divide (example: Louisiana) or possess a large poverty population (example: Mississippi) and smaller states that are losing population (examples: North Dakota and Montana) did not have a single job posted. For job seekers looking for project management opportunities, it means that they better be willing to move to new areas where these jobs are located.

Second, the nine project management knowledge areas do not appear to have equal importance to recruiters. Competencies that are more tactical are indicated more often than those knowledge areas that emphasize strategy, operational details and contingencies. This observation in the data set is quite troubling because this means project management is viewed largely as a tactical task. Perhaps this is an explanation for the many projects that are failing. Successful project management must include a more holistic and systematic view in their job expectations.

Third, it is very clear that project management is viewed as a tactical position in a great majority of the cases. At its minimum, most of the jobs required 2 years of prior experiences. The most common requirement was between 2 to 6 years of experiences. Among those that require less than 2 years, they are actually not really project management jobs. These were the jobs that listed primarily the MS Office Suite application packages and Outlook as software requirements.

Finally, project management certification is not a major requirement in most of the job postings. One possible reason may be that the recruiters may not be familiar with their availability. Among those that require certifications, PMI and PMP are the most popular requirements. Like in the case of software requirements, a minority of the certifications indicated are actually germane to the database function. Again, recruiters appear to think that project management and database management are same.

7. LIMITATIONS AND FUTURE RESEARCH

For this study to be useful and relevant, it should be interpreted with two limitations in mind. First, the outcomes are limited to the selected sample of 150 job postings that is extracted from Monster.com. This sample size was based on a certainty factor of 95 percent and the acceptor error of 0.08. For future studies, one possible way to increase the accuracy of the finding is to have a more restrictive error rate by using a larger sample. A second limitation of this study is in the extraction of the key competencies area. The job postings do not use the exact terminologies of the competencies of knowledge areas. For this reason, the author(s) have to spend many hours interpreting and classifying them into the respective knowledge areas using their individual judgments. This creates quite a bit of room for the many variations in which the job description can be classified.

Finally, there are a variety of ways that this study can be extended. Apart from having a larger sample that may increase accuracy, this subjects selected can also include postings on other major job portals such as CareerBuilder.com, Dice.com, and Hotjobs.com. A comparison of the number and details listed in the respective job portals may provide additional insight into which portal is a better source of placement for project managers. Obviously, a possible variable to add to the list of attributes investigated is salaries. Such information is always useful to job seekers as well as recruiters who are looking for the best fit in the competitive job market for productive as well as talented personnel.

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