

Lessons Learned from Interviewing Project Managers

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Abstract

Each semester at Marshall University the students in the graduate project management course conduct a project manager interview as a homework assignment. The following four questions were included in all interviews:

1. What do you most enjoy about leading projects?
2. What do you least enjoy about leading projects?
3. If I were to begin as a new project manager in the future, what are the most important pieces of advice you could give me that would help me to deal with some of the project management challenges I might face?
4. What kinds of training do you think would be most useful for someone who wants to become a project manager? How could I get that kind of training?

The authors analyze the responses from 126 project manager interviews for general area-of-work and gender trends and report the results.

Overall, project managers like the people interaction that leading projects provides. They also like the details or nature of the work. Lastly, they like the results of the project or they liked managing of the project. Female project managers like the control of the outcome about twice as much as the male project manager.

In contrast, project managers do not like the negative people interactions that leading projects sometimes requires. They also don't like some of the details or nature of the work. Female project managers dislike the negative people interactions more than the male project managers.

Objective

The overall objective of this study is to better understand what it means to be a project manager. The reason this is important is that many engineers change jobs throughout their

careers. For many technical people one possible career path is to become a project manager. This is true for a wide group of people. This group includes those working for chemical companies, engineering and construction firms, service organizations, and manufacturing organizations. This career path is also possible whether the company is small or large. Of course, there are many other career paths available throughout an individual's career.

A better understanding of project managers comes from several aspects of the study. The first aspect is from analyzing the raw data from the project manager interviews that the student completed. The analysis showed some surprising individual answers as well as common answers across all interviews.

The second aspect is the uniqueness seen in the data collected from project managers interviews. A good example of such uniqueness is the strong tie between control and the female project managers surveyed.

Background

Engineering Management Course #660 (EM660 hereafter) is the graduate project management course at Marshall University Graduate College. Each semester the project management students interview a project manager as part of a homework assignment. The following four questions were to be included in all interviews:

1. What do you most enjoy about leading projects?
2. What do you least enjoy about leading projects?
3. If I were to begin as a new project manager in the future, what are the most important pieces of advice you could give me that would help me to deal with some of the project management challenges I might face?
4. What kinds of training do you think would be most useful for someone who wants to become a project manager? How could I get that kind of training?

This study analyzed the responses from 126 project manager interviews for general area-of-work and gender trends and reported the results.

Data Collection & Translation

This study's data collection consisted of three different and separate parts. The first part was completed by the EM660 students. This course specifically studies project management. One of the course assignments for each student in the course was to interview an actual project manager. This interview was to consist of four questions given with the assignment (see questions above) and 5 additional questions made up by each individual student.

By completing the EM660 assignment for interviewing a project manager, the students collected an individual set of data for this study. This was the data collection starting point for this study.

The second part of the data collection was completed by Dr. Eldon Larsen. As the instructor for EM660, Dr. Larsen received the homework assignment and made copies for use with this study in mind.

The third part of the data collection involved transferring the interview information from the student interview on the paper copies into an electronic spreadsheet format. The spreadsheet allowed the data to be sorted and categorized. In addition to the answers to the four questions, the gender of both the interviewer and the interviewee and the general area-of-work for the project manager were included. The different areas of work included are engineering, construction, information systems and/or software development, research and development and/or academia, manufacturing and operations, and service.

Categorizing the data

After the data was translated into the spreadsheet, the answers to the questions were reviewed for common categories. In each of the four main questions, the answers could be grouped into common categories. The groupings included anywhere from 2 to 16 specific answers per individual category. The categories were general in nature. Each question had between three to five answer categories. The data was then resorted, under each question, according to the answer categories. The answer categories are used for the comparisons of subgroups (gender or area-of-work).

Analyzing the data

The analysis of the data is for reporting purposes only. The reported results include all answers given. The reports are given in terms of percentages of the total number of interviews or of the number in the subgroup.

A statistical analysis will not be completed for this project. Bias could be introduced in a variety of ways:

- Bias could be present in the interviews themselves. The students interpreted the project managers' answers for documenting the interviews.
- The translation from paper copy to spreadsheet form is another place where bias could have been added. Interpretation was needed both for determining unique answers and for recording the answers within the spreadsheet.
- Also during translation, the area-of-work determination needed some interpretation as well. Some project managers' area-of-work is uncertain from the interview and was assumed during input into the spreadsheet.
- The gender determination is probably the least interpretative part of the translation. Typically the assumption of gender was based on the student name; but a "Chris" or "Tony" could be male or female, in which case we guessed the gender.
- Categorizing the answers is used to combine like answers. This was yet another area of interpretation.

With the amount of interpretation used during the data processing, proving that the samples (interviews for our case) are independent and normally distributed around a mean is

not possible. Since this is not possible, using statistical methods for analyzing the data would not be valid.

Summarizing Results

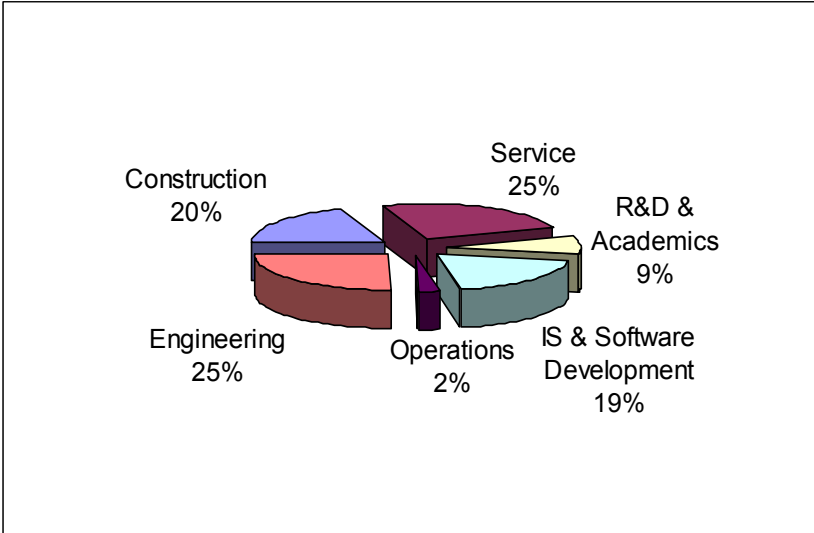
The categorized answers from the interviews are organized based on subgroups of the total interviews. The subgroups are related to gender and area-of-work.

To allow for comparisons, a series of percentage calculations were performed. Percentages are calculated from the total number of interviews. The percentages are also of the entire interviewee populations. Note that an individual interviewee may have answered one, two, or more of the individual answers within a category, but was only included as one count for the category percentage.

The percentage calculations for the category are based on the subgroup size. For example, when looking at the engineering area-of-work subgroup, the percentages for each answer and category are based on only the thirty-two interviews. The thirty-two represented the numbers of interviews in the engineering subgroup and not the total number of interviews completed. This allows for comparing subgroups to the overall interview results.

Project Manager / Student Demographics

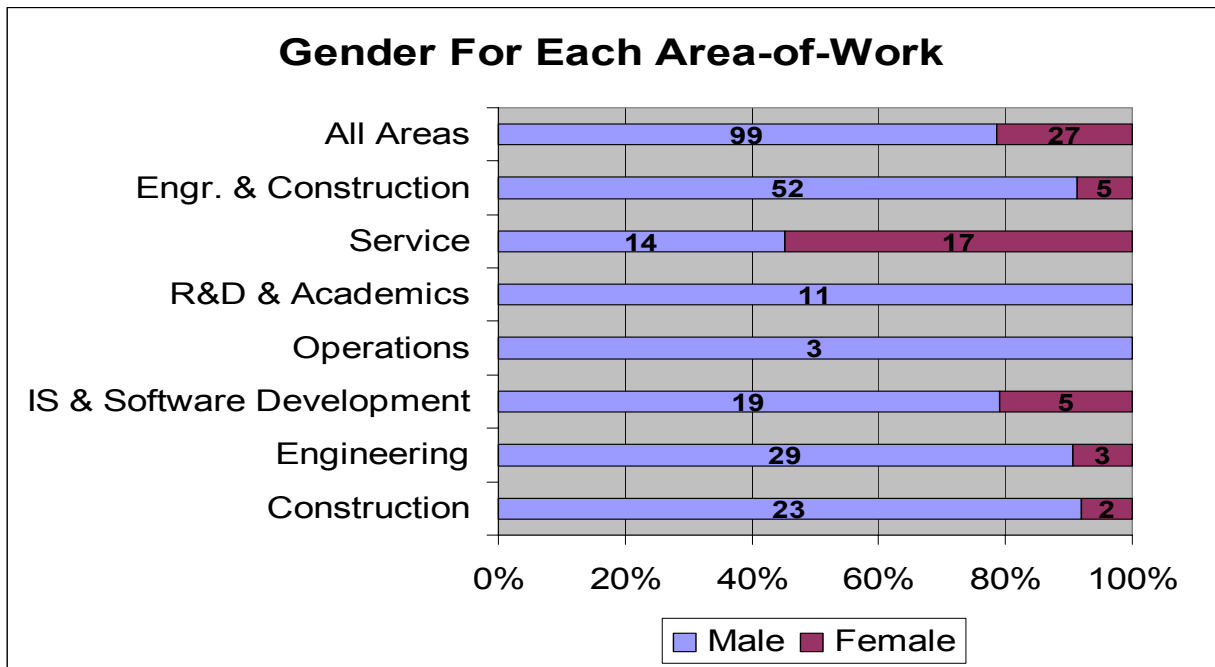
The project managers interviewed are of diverse work areas. Analysis of the work area impact on the answers to the interview questions is evaluated within this study. Due to a limited number of project managers from operations (three total), this area-of-work is excluded from the analysis



Of the 126 project managers interviewed, ninety-nine, or seventy-nine percent, are male. In reviewing a comparison of gender versus area-of work, the service area-of work has the highest percentage of female project managers at fifty-five percent, or seventeen out of thirty one project managers. On the other hand, a combined area-of

work representing engineering and construction has ninety-one percent of the project managers as males (fifty-two out of fifty-seven total). Due to the higher percentages of all the project managers contained in a comparison of engineering and construction area-of-work versus the service area-of-work, this will be the featured comparison.

Gender For Each Area-of-Work



The impact of gender relationship (student gender versus project manager gender) appeared to be insignificant. This was seen by a series of data sorts. The interview data is sorted into four different combination of gender of project manager versus gender of student. Even through this data is available; no real conclusions can be made from the data. The interview data is also sorted into same and mixed gender interviews. Like the data from the four different combination of gender of project manager versus gender of student, this data is available; no real conclusions can be made from the data.

Area-of-Work Categorized Results

The comparisons of the overall category results with the results broken down into areas of work add yet another dimension to this analysis. This allow for direct comparisons between the different areas-of-work.

- **Question #1: What do you most enjoy about leading projects?**

The people interactions, results of the project or position, and the details or nature of the work related categories are enjoyed more than the being involved from start to finish or being in control. The top individual answers included the accomplishment of project objectives and the interaction with team members or people in differing parts of the organization.

With only twenty-five percent of the all interviews having answers in this category, the “involvement with project” is the lowest enjoyment category for project managers for this question. The “control of outcome” category, with thirty-two percent of the all project managers indicating an answer within this category, is the second lowest enjoyed category for this question. With the largest percentage (sixty-three percent) of the project managers indicating an answer within the “people interactions” category or the “results of project or position”, these are the top categories for what project managers enjoyed that most. Just below the two top answers is enjoyment of the details or nature of the work. This category has fifty-eight percent of the project managers indicating an answer.

- **Question #2: What do you least enjoy about leading projects?**

One of the things project managers enjoy the most are the people interaction aspects, but these same people interaction issues rank the highest for the things that project managers do not enjoy. Similarly, the details or nature of the work aspects rate as one of the highest on the enjoy question, but also rates very high on the do not enjoy responses. As one project manager conveyed in the interview “The thing I like the most about leading project is also the thing I most dislike about leading projects.”

The top individual answers to this question included unrealistic or unclear project expectations and having to motivate team member. The people interaction and details or nature of the work answer category ranked highest in this question. On the other hand, the lack-of-control aspects and the result-of-project or position category result in very low percentages. Overall, the percentage variations are less for this question than any other question. With eighty-five percent of all the project managers indicating that they did not enjoy the people interaction, “people interactions” is the top percentage for all questions and categories for the overall study. Whether this is personnel conflicts or difficulties or communications issue, this corresponds to about seven out of eight all project managers interviewed. From the entire group of project manager interviewed, two out of three indicate there was some part of the details or nature of the work that they did not enjoy.

- **Question #3: If I were to begin as a new Project Manager in the near future, what are the MOST IMPORTANT PIECES OF ADVICE you could give me that would help me to deal with some of the project management challenges I might face?**

With this advice question receiving the largest number of different responses, it is surprising to see how easily the advice fit into the four categories and that the lowest percentage category is almost as high as the highest percentage for an individual response.

The top individual answers included advice to understand project and required tasks, do good planning and organization, and to get to know your people (situational leadership). With four out of five service area project managers giving communications advice, this is the higher percentage area-of-work. The lowest percentage is from the construction area-of-work, but this still correlates to three out of five project managers giving communications advice. Construction project managers have the most people / personnel advice to give in this area with almost thirty-six percent. Three out of four information systems and software development project managers give detailed project advice. For personal advice, research and development also give the highest percentage (fifty-five percent) of advice.

- **Question 4: What kinds of training do you think would be most useful for someone who wants to become a project manager? How could I get that kind of training?**

Once again this question is easily broken down into categories. With the high percentage of individual answers given initially (fifty-one percent for “on the job” training for instance), the percentage of all the categories is higher than the other questions. The other top answers included formal education (college, book learning. etc) and formalized training (within company or from the Project Management Institute or the Construction Industry Institute). Formal education answers may be biased due to the interviews being completed for a college course.

For the training and education category, a huge difference is seen between the highest and lowest work area percentages. With only thirty-six percent, the research and development area give the least recommendations for training and education. With eighty-eight percent, the information systems and software development have the most recommendations. Construction project managers have the least recommendations to give in the skills / knowledge category (forty-eight percent). With the highest percentage (sixty-six percent), the engineering project managers give more skills / knowledge recommendations. Construction project managers have the most recommendations related to experience and service project managers have the least.

Gender Based Categorized Results

A comparison of the overall category results is analyzed next by gender. Each of the questions is reviewed individually.

- **Question #1: What Do You Most Enjoy About Leading Projects?**

By organizing the gender data in this way, several items appear to have significant differences between the female project managers and the male project manager. First, it becomes apparent that a greater percentage of females enjoy controlling the outcome of the project or like being in charge. The control of outcome percentage for the women is over double that for the men. Second, the male project managers enjoy the people interactions more than the female project managers. The men enjoy the people interaction aspects about forty percent more than the women. Third, fifty percent more female project managers enjoy the start to finish involvement with a project than with the men.

- **Question #2: What Do You Least Enjoy About Leading Projects?**

As with question #1, there are some interesting differences between the female and male project manager for the things that they did not enjoy about leading project. First, twice as many male project managers did not enjoy the lack of control over the outcome as the female project managers. Second, ninety-three percent of the entire female project manager interviewed indicates that there is a people interaction that they did not enjoy. This corresponds to twenty five out of all twenty-seven female project managers interviewed. Third, female project managers indicate that they did not enjoy the results of the project or position about 120% more that their male counterparts.

- **Question #3: If I were to begin as a new Project Manager in the near future, what are the MOST IMPORTANT PIECES OF ADVICE you could give me that would help me to deal with some of the project management challenges I might face?**

When asked for advice, the differences between the female and male project manager do not appear to be as significant as with the questions about what they enjoyed and did not enjoy about leading project. Over three quarters of the female project managers give communications related advice. The percentage of women giving this advice is twenty percent higher than their male counterparts. The percentage of male project managers giving detailed project advice or personal advice is twenty percent higher than the percentage of female project managers.

- **Question 4: What kinds of training do you think would be most useful for someone who wants to become a project manager? How could I get that kind of training?**

No significant differences are seen in the recommendations for training, skill, or experience between the female project managers and the male project managers.

Engineering and Construction versus Service Comparison

A specific comparison of the Engineering and Construction (E&C hereafter) project managers with the Service related project managers is completed. These areas-of-work was chosen for the comparison because of the large percentage (about seventy percent) of project managers represented. This comparison also has a large difference in the gender percentages (fifty-five percent females in service versus nine percent female in E&C). This arrangement will help determine if the differences between E&C and Service is because of the work or due to the different mix of gender in the subgroup.

- **Question #1: What Do You Most Enjoy About Leading Projects?**

In reviewing the E&C against the Service answer percentages for question #1, there are three categories with fairly large differences. These are the people interaction, details or nature of the work, and results of project or position categories. Of the three, in only one is E&C percentage higher and that category is the people interaction category. In the other two categories, the service percentage is higher, but not as great a gap as with the people interaction. However, by reviewing the male / female data for the E&C and service areas, the difference is better defined. For the people interaction, there is a significantly higher percentage for the male E&C project managers versus the female from both E&C and service and the males in the service area. For the other two categories, the impact appears to be from the area-of-work than a gender influences.

- **Question #2: What Do You Least Enjoy About Leading Projects?**

Male service project managers did not enjoy the details or nature of the work aspects at a higher percentage than both the female and male E&C project managers and the female service project managers.

- **Question #3: If I were to begin as a new Project Manager in the near future, what are the MOST IMPORTANT PIECES OF ADVICE you could give me that would help me to deal with some of the project management challenges I might face?**

In terms of advice, three particular items show up in the data. First, E&C project managers give more personal advice than service area managers. Second, male service area project managers give detailed project advice a higher percentage of the time than both the female and male E&C project managers and the female service area managers. Lastly, the service area project managers (both men and women) give communications advice a higher percentage of the time than the E&C project managers.

- **Question 4: What kinds of training do you think would be most useful for someone who wants to become a project manager? How could I get that kind of training?**

Two trends are seen for this question. First, the E&C project managers give a higher percentage of experience recommendations than service area managers. Secondly, the male

service area project managers give a higher percentage of skills / knowledge recommendations than both the female and male E&C project managers and the female service area managers.

Study Conclusions

The purpose of this study was to try to answer some basic questions about project managers. This study is successful in providing some unique answers the four common interview questions.

For the first question related to what do project managers like about their jobs. Project managers like the people interaction that leading projects provide. They also like the details or nature of the work. Lastly, they like the results of the project or of being a project manager. An interesting gender difference is that female project managers also like the control of the outcome about twice as much as the male project managers.

When reviewing what project managers dislike about their jobs, there are several trends apparent. Also project managers do not like the negative people interactions that leading projects require. They also don't like some of the details or nature of the work. Lastly, the female project manager dislike the negative people interactions more that the male project managers

As for the advice and training questions, the answers are not as clear. The answers are clouded depending on gender and work area of the project manager.

Recommendations for Future Study

The recommendations for future study surround the data-gathering steps of the research method. The greatest recommendation would be to improve the data gathering method to allow the use of statistical based techniques to analyze and report the results. The improved data gathering method also needs to reduce interpretation between the project manager and the student and between the written report and the analysis method.

The first recommendation is to continue to require the EM660 student to conduct interviews of project managers. This exercise helps the students to understand project management better and to allow insight into what is a project manager.

The second recommendation is to continue to require the students to be creative and to come up with five additional questions beyond the required four. This allows the students to specialize the questions based on their understanding, a specific industry, or maybe a specific situation. This also gives the student an aspect of ownership with the interview. The ownership aspect will be even more important with the proposed changes to the first four questions.

The third recommendation is to use a five-point Likert type scale for part of future project manager interviews. This scale could be used based on ranking the categories and answers from this project for the first four required questions from homework assignment. By using this, future project manager interviews could be analyzed statistically using the ranking assigned to each item. For example, several of the studies read during the literature review had used a five-point Likert scale ranging from high of five to a low of 1. By using such a

system, the data was analyzed statistically. Lastly, with such a data collections system in place, the data could be used to develop correlations based on gender or industry or any other variable that data was available for.

The fourth recommendation would be to include additional information about the interviewed project managers' background and experience. For example, differing levels of project management experience may give differing responses. Differing education levels, genders, or industries may also be responsible for differing responses.

The last recommendation also related to future studies. This recommendation would be to pretest any interview/ranking system with a sample before settling on the exact form and questions. This would allow for fine tuning the form and interview protocol before collecting too much useless or unnecessary data from the project managers by the future students.

About the Author(s)

Robert (Tony) Mai is a Process Engineering Specialist for The Dow Chemical Company in Charleston, West Virginia. During his career, Tony has worked in a wide variety of projects both domestically and internationally including a long term assignment to start-up a grassroots olefins unit in Malaysia. Tony is a Registered Professional Engineer in West Virginia. He has a Bachelor's of Science in Chemical Engineering from the University of Idaho. He also has a Master's of Science in Engineering with an emphasis in Engineering Management from Marshall University.

Eldon R. Larsen is a Professor of Engineering at the Marshall University Graduate College where he leads the Engineering Management emphasis for the Master of Science in Engineering degree. He chairs the Marshall University Graduate Council. Dr. Larsen has taught Project Management courses since 1994 in industrial and university settings. Dr. Larsen received BS and MS degrees in Chemical Engineering from Brigham Young University. He has a PhD degree in Chemical Engineering from the University of California at Berkeley.

Dr. Larsen worked 16 ½ years for Union Carbide Corporation (UCC). At UCC he led a major effort to develop and implement Project Management for Research and Development. As a result of his efforts, he received an individual "Chairman's Award," the highest award an individual could receive at UCC.

Dr. Larsen is currently the national Second Vice-Chair of the Management Division of AIChE, and is a past Director of that division. He has served as Vice Chair, Chair, and Past Chair, and is currently Member-At-Large of the Charleston Section of the AIChE. He is an At-Large Director of the West Virginia/Ohio Valley Chapter of the Project Management Institute (PMI), a member of the American Society for Engineering Management, and a member of the American Society for Engineering Education.