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# A Survey on Software Project Management Report Part I Importance of Project Management Areas (Short Version)

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**A Survey on Software Project Management  
Report Part I  
Importance of Project Management Areas  
(Short Version)**  
By  
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July 2008

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## INTRODUCTION

**Objectives of this Study:** The objectives of this study are to identify (i) the importance of various project management areas and (ii) project management challenges in software projects. This study is conducted to form a basis for a software project management framework. This report focuses on the first part of the objective. The project management areas are identified through extensive literature search and software practitioner interviews.

**Survey Instrument:** The survey instrument was a self-administered questionnaire and contained 13 questions. The first two questions were needed for the surveying protocol. In the third and fourth questions, necessary background information regarding the respondents was collected. 5<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> questions were used to identify the importance of project management areas listed previously. 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> questions were used to identify challenging project management areas in software projects. In the online version of the questionnaire, the order of the choices in the 5<sup>th</sup> question were randomized. Such randomization eliminates the bias due to ordering of the choices.

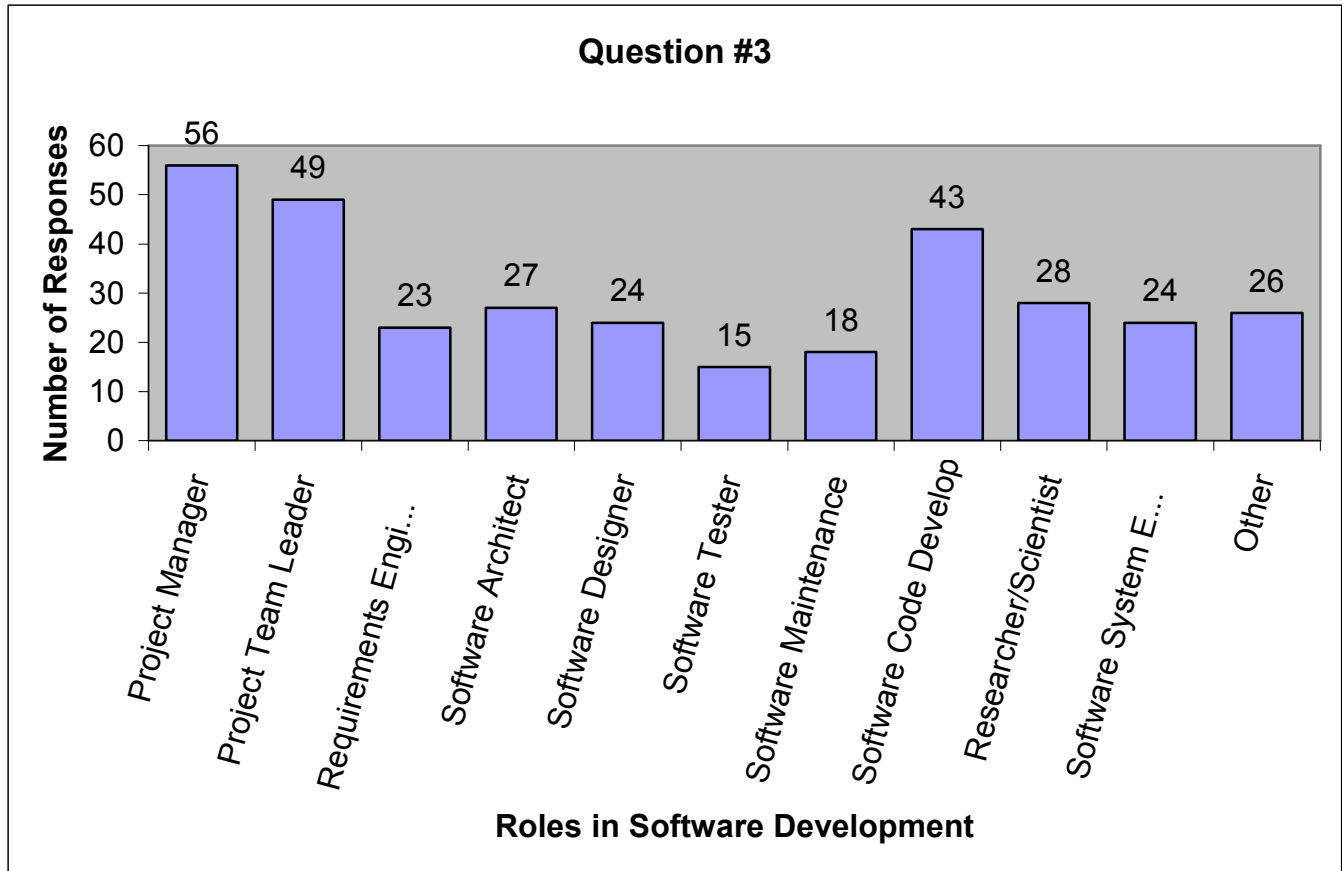
**Time Frame of the Survey Study:** The survey study was conducted in the first quarter of 2007 and the study took more than four months including the pilot study.

**Population of the Survey:** The survey invitation was distributed to over 400 software development practitioners. The exact number of invitations that reached to survey sample population was not known because a portion of the sample population was distributed to members of various special interest groups via bulk e-mail. 234 individual e-mail invitations were sent to software development practitioners. The primary qualification criterion was having experience in software development. The selection of the sample population was random.

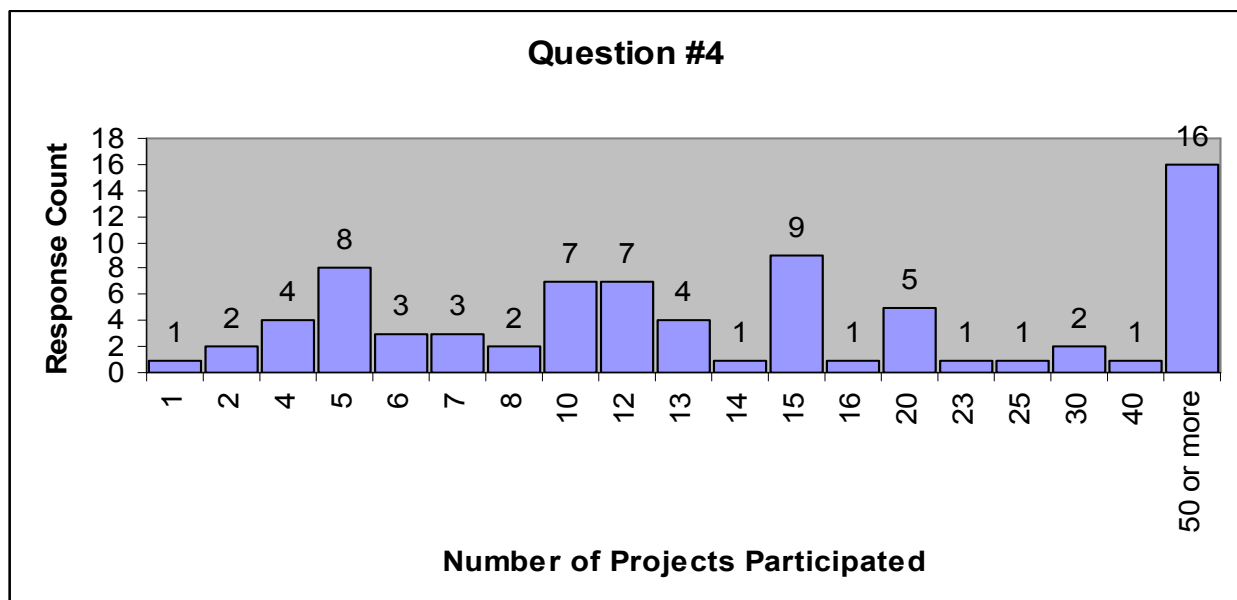
**Response Rate:** There were 104 responses to the survey. The response rate is around 26%. The survey study had participants from North America, South America, Europe, and Asia with North America being the dominant location. There were around 78 valid responses. A few of them were partially usable and the rest was completely usable.

### SURVEY RESULTS

**Question #3. Please indicate your roles and corresponding experience in software projects.**



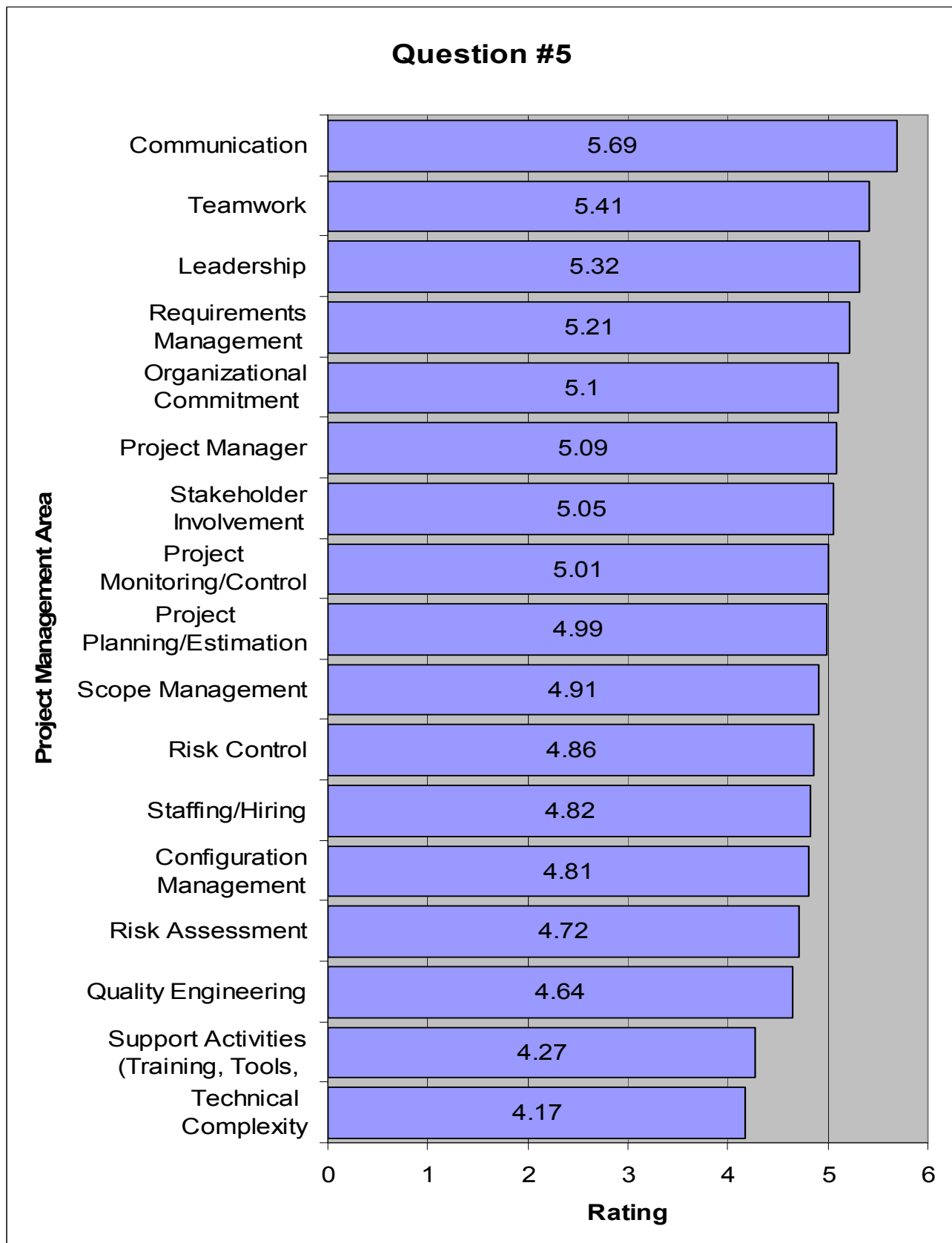
**Question #4. What is the number of the projects you participated?**



**Question #5. How would you rate the importance of a particular concept, practice or role within software project management?**

- 0 = very unimportant
- 1 = unimportant
- 2 = somewhat unimportant
- 3 = neither important nor unimportant
- 4 = somewhat important
- 5 = important
- 6 = very important
- N/O = No Opinion

<b>Project Management Area</b>	<b>Mean of Ratings</b>
Communication	5.69
Teamwork	5.41
Leadership	5.32
Requirements Management	5.21
Organizational Commitment	5.10
Project Manager	5.09
Stakeholder Involvement	5.05
Project Monitoring and Control	5.01
Project Planning and Estimation	4.99
Scope Management	4.91
Risk Control	4.86
Staffing and Hiring	4.82
Configuration Management	4.81
Risk Assessment	4.72
Quality Engineering	4.64
Support Activities (Training, tools, etc.)	4.27
Technical Complexity	4.17



**Question #11. In this section, you are requested to consider ALL of your PAST PROJECT EXPERIENCES.**

**Four different areas have been identified for software project management. We want you to rate these areas with a percentage regarding their importance within software project management. These are people, product, process and risk.  
The total rating should add up to %100.**

- \* People related concepts and practices (Project Manager, Staffing/Hiring, Leadership, Communication, Teamwork, Stakeholder Involvement, and Organizational Commitment)**
- \* Product related concepts and practices (Quality Engineering, Technical Complexity, and Configuration Management)**
- \* Process related concepts and practices (Project Planning/Estimation, Scope Management, Project Monitoring and Control, Support Activities (training, tools etc.), Requirements Management)**
- \* Risk related concepts and practices (Risk Assessment, Risk Control)**

**Please use (0,5,10,15...95,100)**

<b>People related concepts and practices</b>	<b>....%</b>
<b>Process related concepts and practices</b>	<b>....%</b>
<b>Product related concepts and practices</b>	<b>....%</b>
<b>Risk related concepts and practices</b>	<b>....%</b>
<b><u>Total = 100%</u></b>	

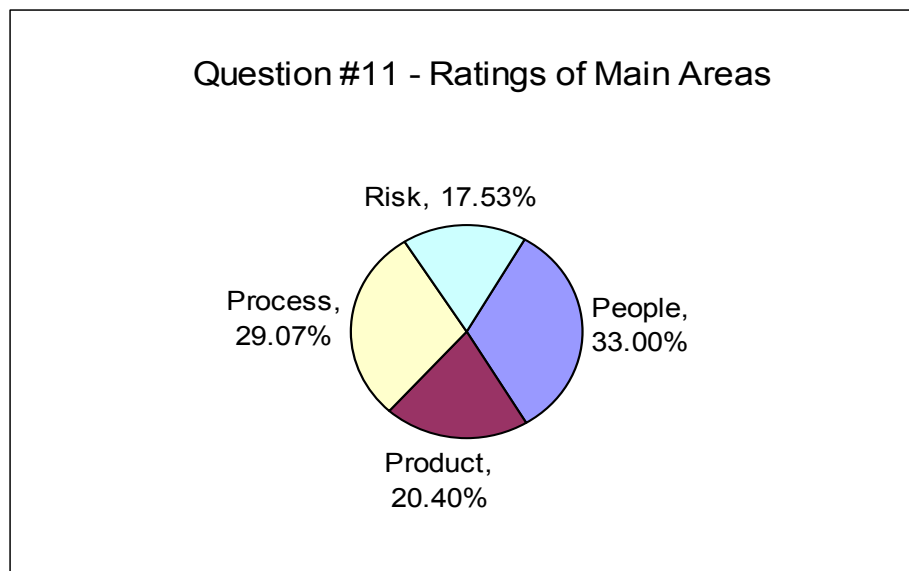
There were 75 usable responses to this question. The mean of the ratings are as follows:

**People: 33.00%**

**Process: 29.07%**

**Product: 20.40%**

**Risk: 17.53%**



In table below, the responses from question #5 has been rearranged with regard to the main areas.

<b>People Related Areas</b>	<b>Means of Ratings</b>
Communication	5.69
Teamwork	5.41
Leadership	5.32
Organizational Commitment	5.10
Project Manager	5.09
Stakeholder Involvement	5.05
Staffing and Hiring	4.82
<b>Process Related Areas</b>	<b>Means of Ratings</b>
Requirements Management	5.21
Project Monitoring and Control	5.01
Project Planning and Estimation	4.99
Scope Management	4.91
Support Activities (Training, tools, etc.)	4.27
<b>Product Related Areas</b>	<b>Means of Ratings</b>
Configuration Management	4.81
Quality Engineering	4.64
Technical Complexity	4.17
<b>Risk Related Areas</b>	<b>Means of Ratings</b>
Risk Control	4.86
Risk Assessment	4.72



**Question #12. According to you, what are the most important concepts, principles, or practices in software project management?**

This question was an open-ended question. The goal of this question was to collect the participant's view on the most important aspects, principles or practices. The responses are categorized using a coding method. The table below presents the classification of responses and corresponding frequencies.

<b>SPM Area</b>	<b>Frequency</b>
Project Planning and Estimation	27
Communication	24
Requirements Management	24
Teamwork	20
Stakeholder Involvement	19
Project Monitoring and Control	18
Leadership	16
Other	16
Scope Management	14
Organizational Commitment	13
Staffing and Hiring	10
Project Manager	8
Quality Engineering	7
Risk Control	6
Configuration Management	6
Risk Assessment	6
Support Activities (Training, tools, etc.)	4
Technical Complexity	0

The table below lists the items under “other” category:

<b>Other Response</b>	<b>Frequency</b>
Need balance in areas	2
Need attention to design	2
Metrics and measurement is important.	2
Sponsorship is important.	1
Testing is important.	1
Being open to various technical solutions	1
Technical part is easy.	1
Follow CMMI	1
Managing heroes at work	1
Consideration of technical aspects	1
Lessons learned	1
Different organizations require focus on different areas.	1
Consideration of systems architecture and systems approach	1

**Question #13. According to you, is there an area, activity, concept or dimension that is left out in this survey? Or anything you would you like to add?**

This question was an open-ended question. The goal of this question was to collect the survey participant's feedback on the issues that are mentioned in the survey instrument. Because of the variance in the responses, a coding method was not successfully applied.

- There were a couple responses indicating that the survey instrument has good coverage.
- There were quite a number of responses reemphasizing some of the areas already mentioned in the survey. They may listed as politics, teamwork, human side of software development, importance of leadership, importance of risk management, project championship (such concept is implicitly covered in the area of stakeholder management such as project champion is a stakeholder)
- There were some responses indicating the importance of measurement and process improvement activities in software projects.
- In a few responses, it is mentioned that it is difficult to separate different aspects of project management listed in the survey. Most areas depend on each other.
- Two of the respondents indicated the importance of security considerations during project development such as software assurance and information security.
- In a few responses, the importance of systems thinking is emphasized. They indicated that software component is part of a system and eventually the software development effort has to integrate to a bigger system development effort.
- In a few responses, the respondents suggested to investigate the link between different software life cycle development approaches and the project management areas covered in the survey study.
- Others respondents indicated the importance of requirements activities, creating and visiting lessons learned documents, the use of tools, the negative effects of task switching and multitasking, the importance of project effort estimation, project monitoring and control, iterative development, reuse, significance of having adequate testing facilities, project monitoring, the importance of developer feedback in project planning efforts, protecting the project team from counterproductive external interference, system safety issues.