

Full Length Research Paper

The impact of stakeholder communication on project outcome

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Project management demands exercise of nine knowledge areas; managing project scope, time, cost, quality, HR, stakeholder communication, procurement, risk and integration of all these. From July 2007 to April 2009, this study observes that in the IT industry working in Islamabad, Pakistan, the results of heterogeneous IT projects suffered from problems like scope creep, cost and schedule overrun and lack of customer satisfaction on project results due to inappropriate stakeholder communication management. Focusing on stakeholder communication it was hypothesized that the quality of the stakeholder communication management determines the project outcome. Adopting stratified sampling 70 heterogeneous IT projects from 24 different software houses were selected. Using a reliable instrument, data was about the quality of stakeholder communication invested by the project managers and the consequent results of the IT projects was collected in a cross sectional manner. The data was analyzed using frequency distribution, Pearson correlation and linear regression. The findings confirmed a strong correlation and dependency of project outcome on stakeholder communication. It recommended ensuring good quality stakeholder communication considering it a primary tool for determining the project's scope, time and cost. The study contributes guidelines and templates to help project managers improve stakeholder communication skills and its documentation respectively.

Key words: Project management, project stakeholder management, stakeholder communication, project communication management, information technology (IT) projects communication and management, stakeholder risk management.

INTRODUCTION

Project is a time-bound, organized endeavour for providing service(s) and producing a product. Project management is the application of knowledge, skills and tools to ensure that a given project is accomplished successfully. In order to ensure project success, the existing framework of project management advises project managers to exercise nine knowledge areas. These are management of the project's scope, time, cost, quality, human resources (HR), stakeholder communication, procurement, risk and integration. Project scope, time and cost are considered triplet constraints and primary functions of the projects. Now- a- days, quality is also considered the fourth primary function. However,

management of HR, stakeholder communication, risk and procurement are declared secondary and support functions for project management (Project Management Institute [PMI], 2009; Schwalbe, 2010). This is how the literature guides that the nine knowledge areas are not equal in priority and precedence. Although distinguishing the nine knowledge areas seems rational in the bookish context, however the reports on the real exercises of stakeholder communication for various IT projects in the IT industry of Islamabad, Pakistan provided a different picture of its significance. It is indeed the stakeholder communication through which the project's scope, time and cost are interpreted, maintained and pursued during a project's execution. As the real practices in the selected IT industry presented a view different from what literature says, the study focused on stakeholder communication as one of the variables of interest.

From July 2007 to January 2009, this study observed

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that in the IT industry of Islamabad – Rawalpindi, Pakistan, heterogeneous IT projects suffered due to problems like scope creep, cost overrun, schedule delays and customers' dissatisfaction due to the poor quality of managing stakeholder communication and their associated risks. The study selected 24 large software houses including Telecom organizations to identify heterogeneous IT projects with large scope, schedule and budget demanding a challenging and sensitive care in practice of project management knowledge areas. The study realized it is the stakeholder communication through which scope, time, cost and quality standards and probable risks for IT projects are learnt and documented. The study discovered that the project managers along with certain senior team members, mainly including system or business analysts and top management, interact with the clients to learn and define the three primary constraints for the IT projects. This entire exercise revolves around stakeholder communication. Once the primary determinants of any project are interpreted, they are communicated with the project team as much as applicable, based on the role of every team member. The overall supervisor happens to be the project manager who is responsible for the entire management of communication since its beginning to end.

The study identified two different categories of different IT projects. The first category is the IT projects that were reported to have suffered from problems like scope creep, schedule and cost overrun and customers' dissatisfaction. The second category is the IT projects that remained immune from the problems mentioned. The study identified and selected a total of 70 IT projects of both categories. The study set exploring and learning how the quality of stakeholder communication for IT projects affects the project outcome in terms of accomplishing the defined scope within the allocated budget and time ensuring customers' satisfaction as its objective. The study clarifies that it shall entertain the aspects of stakeholder communication relevant to outcome of the selected sample of the IT projects because stakeholder communication is a broad concept that affects different areas like time, scope, stakeholder risk etc but such details are not in scope of the study.

The study targets identifying the precedence of the stakeholder communication among all the aforementioned nine knowledge areas as rendering it merely a secondary support function in the literature does not match with its importance given to it in the real industrial practices. Further, the study intends to discover if the literature supports project managers with a structured framework for stakeholder communication that happens applicable in various situations easily.

Research theory and model

Stakeholder communication encompasses defining the scope of the project, set the requirements related to

scheduling and costing and conducting routine meetings with the team as well as with the clients. Therefore, even a minor mistake in communication planning can lead the project to chaos. Structured framework for communication helps track and distribute information throughout the project life cycle (Desouza and Amuza, 2003). This study perceives that stakeholder communication management is the function that drives the entire project throughout its life cycle. Stakeholder communication drives all other functions and knowledge areas from initiation of a project until its close out. Communication with clients enables the manager to learn project scope, time and cost requirements while intra-team communication enables the project manager to address the project's performance. This study interprets that the quality and effectiveness of communication is the basic prerequisite that makes or breaks the project.

Stakeholder communication, that is the key to success or failure of a project, is a full-fledged knowledge area essential for Project Management (PMI 2009; Schwalbe, 2010). A web source of knowledge revealed that 'project management is central to businesses today', (2005). It contributes that project management remains effective only when there is an effective communication for team management. Flow of correct and timely information, in a well structured manner makes the project team efficient and the processes start to produce in time that affects the project's outcome positively. Establishing a reporting hierarchy between the team members of any project is recommended as an essential HR practice. Where stakeholder communication management is necessary for the beginning and progress of any project, it simultaneously addresses relations and motivation of the project team. Therefore, effectiveness in stakeholder communication management is critical for the project's success. This study perceives that project team members are the primary stakeholders. It is the project manager who is responsible to ensure the flow of adequate, precise and timely information to each member of the team so that at least, the scope and schedule of the project is well interpreted by every member as much as his/her role requires. This study realizes that the communication among stakeholders, including the project team is an ongoing activity that needs to be maintained through the project's life cycle with due care and responsibility. This study interprets that project managers should define and implement a formal communication framework to involve all external and internal stakeholders of the project. The study learnt that literature advises the project managers to update their team members with details like what information will be generated, when, where, by whom and to whom it must reach and at what time. However, this study identifies that the literature does not provide adequate assistance for the project managers on how to develop an effective framework for stakeholder communication easily.

The consciousness of the quality in stakeholder communication is required to ensure that the project ends

achieving success. This study therefore finds it important to explicitly understand what project success is. Success of a project is not limited to a single connotation. Usually, IT professionals consider project success achieved when a project gets accomplished within the stipulated time and budget fulfilling the end user's requirements (PMI, 2009).

An online source of knowledge revealed that the organizations adopting a 'formal project management methodology' (2006) have considerable competitive advantage over those which do not follow a formal approach. The mentioned source considers the following attributes as hallmarks of project success:

1. Reduced time-to-market and time-to-profitability, both key factors for any organization, develop products through their projects.
2. Ensure predictable schedules for profit and product delivery.
3. Offer more effective ways to prioritize, allocate and monitor resources.
4. Demonstrate a commitment to excellence to your customers, your employees and other stakeholders.

This study finds the aforementioned guidelines for project management helpful for interpreting what the project success is. These guidelines indicate that project success could be a mix of the magnitude of the profitability and the times estimated for delivery of the products to the customers and return on investment. The study perceives that profitability may not be a primary concern of project managers who are not sponsoring the projects as this aspect is usually the concern of entrepreneurs in the industry while most project managers view the project as a technical assignment for themselves. However, this study acknowledges meeting timelines should be a primary concern for project managers to avoid cost overrun. This study identifies timing and profitability as two parameters for measuring the project success out of which timing happens to be a major responsibility of the project managers in most of the cases and further a factor that could affect profitability. Ensuring the conformance and compliance of a predetermined timeline is hence important that requires effective communication down the line throughout the project life cycle.

Aaron et al. (2001) declare project success achievable by declaring project management a strategic activity, but complex. Traditionally, a project is perceived successful when it meets time, budget, and performance goals. However project success is not just meeting time and budget. The objective of their study was to develop a multidimensional framework for assessing project success, showing how different dimensions mean different things to different stakeholders at different times for different projects. Given the complexity of this question, a combination of qualitative and quantitative methods and two sets of data were used. Their analysis identified four major, distinct success dimensions for operationalizing it

that were: (1) project efficiency, (2) impact on the customer, (3) direct business and organizational success, and (4) preparing for the future. The method of Aaron et al. (2001) seems more customer-focused and futuristic to this study. It is rational as it targets reviewing what the project has yielded consequently. All the four dimensions contributed by the Aaron et al. (2001) demand effective communication with all the stakeholders.

Standing et al. (2006) recommend measuring project success in terms of fulfillment of requirements, confinement to the allocated budget and time, customer satisfaction and any other applicable parameter that the situation demands. Standing et al. (2006) acknowledge that stakeholder communication is one of the parameters that help project managers in leading the project to success. However, this study realizes that despite adequate acknowledgement of the significance of communication, the literature does not help the project managers with a structured framework for stakeholder communication that acts as a universal tool in helping project managers manage stakeholders' communication effectively.

Based on the interpretations from the literature and observations of the real IT project management in the industries, the study set the framework comprising two variables. Stakeholder communication is taken as an independent variable keeping the project result as the dependent variable.

The study selected the definition recommended by Pitt et al. (2000) for interpreting testing its independent variable stakeholder communication. The major dimensions include a well structured format of communication and its frequency during the project life cycle. The study further imitated the recommendations of Schwalbe (2010) to further elaborate the same concept by focusing on the quality and quantity of the information that stakeholder communication targets, produces and achieves for any project.

The study adopted the definition of Standing et al. (2006) for interpreting project success. It entertains the fulfillment of the requirements defined in project scope, accomplishment of project within budget and stipulated timelines, customers' satisfactions and any other advantages to the project organization provided in the given situation. Figure 1 presents the research model of the study in detail.

Hypotheses

H₁: The better the quality of management of stakeholder communication is, the greater the prospects of project success would be.

H₂: Stakeholder communication in real practice of project management is not a function secondary in importance.

METHODOLOGY

This is a cross sectional study that was conducted in the IT industry

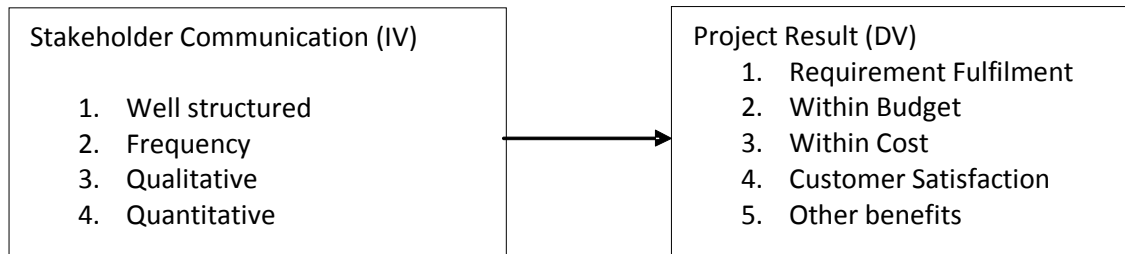


Figure 1. Research Model

of Islamabad and Rawalpindi, Pakistan during the period from July 2007 to April 2009. The study selected 24 large software houses including telecom organizations. It selected the stratified sampling technique to identify and select a sample of 70 heterogeneous IT projects that have been accomplished during the time frame mentioned. The IT projects were mainly dealing with large databases, ERP solutions, telecom software support and development and certain other types like online web portals, etc. The study's selection criteria for the IT project was to ensure that the project team size was at least 5 members or above and its scope was large enough to demand at least 1.5 years for its accomplishment.

The study adopted a pre-tested, reliable instrument adopting questions from the studies of Pitt et al. (2000) and Standing et al. (2006) for collecting, coding and measuring the data relevant to stakeholder communication and its impact on the project result. The reliability and validity of the instrument was high. Table 4 presents the reliability measure of the instrument used by this study that has been tested using SPSS 15.0.

For data analysis the study employed SPSS 15.0 for conducting the analysis of frequency distributions of the dependent variable project result as given in Table 1. The study tested the anticipated correlation between stakeholder communication and project result through Pearson's correlation test whose results are discussed in the next section and elaborated in Table 2. The study also applied linear regression between stakeholder communication and project result to learn and analyze the impact and significance of stakeholder communication for projects results. Its details are provided under Table 3.

RESULTS

Table 1 presents the frequency analysis of the dependent variable project result. To formulate and interpret Table 1, this study utilized following codes for different possible values of the dependent variable- Project Result DV:

- a. Project badly failed as 1
- b. Project failed as 2
- c. Satisfactory project completion as 3
- d. Effective project completion as 4
- e. Excellent project completion as 5

The results in Table 1 revealed that of the selected 70 IT projects of different types, 34.3% IT projects suffered due to substandard stakeholder communication while 65.7% remained successful due to good quality stakeholder communication 3.0 is interpreted as the threshold value for at least satisfactory completion of the project. The

lesser the value than 3.0, the closer the project result to failure is. On the other hand, more the value towards 5.0, better the accomplishment of project. These figures indicate that about 46 projects remained successful while 24 suffered in the selected sample due to quality of stakeholder communication. This finding is evidence that stakeholder communication impacts the project result significantly. This study interprets that considering stakeholder communication secondary is not rational in real practice as compromise on quality of stakeholder communication led 28.6% IT projects to suffer from scope creep, schedule and cost overrun and customer dissatisfaction.

Table 2 indicates that stakeholder communication and project result are highly correlated (Pearson value = 0.718 and $P < 0.000$ in Table 4). The study set H_1 as better the Stakeholder communication, greater the prospects for project success. As Pearson correlation between the two variables under discussion is very high, it indicates that project result highly depends on better quality of stakeholder communication. Thus the study substantiates the mentioned H_1 . The results in Table 3 further indicate that the significance of stakeholder communication for project success should not be considered secondary.

Next, the study applied linear regression between stakeholder communication and project result to further validate and confirm its findings. This study acknowledges that its selection of variables is limited to testing the impact of the independent variable that is, stakeholder communication on the dependent variable that is, project result through linear regression. It is a fact that a project requires various factors to be contributing positively for its success. However, the mentioned limitation of this study is phenomenal as simultaneously entertaining all the relevant variables that affect project result is not pragmatic. The study therefore focused on the selected independent variable under assumption that the confounders and/or intervening variables necessary for project outcome were maintained up to the mark for the selected sample. However, confounders were out of the scope of this study.

Table 3 is the result of running the regression. The results indicate that stakeholder communication as an independent variable is a significant determinant of the

Table 1. Frequency distribution project result (dependent variable).

Value between 1 to 5	Frequency	Percent
Project badly failed		
1.33	1	1.4
1.50	1	1.4
1.67	4	5.7
1.83	2	2.9
Project failed		
	5	7.1
2.17	2	2.9
2.50	6	8.6
2.83	3	4.3
Satisfactory project completion		
	2	2.9
3.17	3	4.3
3.33	1	1.4
3.50	1	1.4
3.67	4	5.7
3.83	2	2.9
Effective project completion		
	10	14.3
4.17	12	17.1
4.33	3	4.3
4.67	3	4.3
4.83	1	1.4
Excellent project completion		
	4	5.7
Total	70	100.0

Table 2. Pearson's coefficient of correlations.

Variable		Stakeholder communication (IV)	Project result (DV)
Stakeholder communication (IV)	Pearson correlation	1	0.718**
	Sig. (2-tailed)	-	0.000
	N	70	70
Project result (DV)	Pearson correlation	0.718**	1
	Sig. (2-tailed)	0.000	-
	N	70	70

** Correlation is significant at the 0.01 level (2-tailed).

Table 3. Result of regression between stakeholder communication and project success coefficient, standard error in parenthesis, t-value in brackets and P-value in italic.

Constant	Stakeholder communication (IV)	R ²	F
-0.543 (0.598)	0.242 (0.183)	0.812	19.947
[-0.909]	[1.326]		
<i>0.376</i>	<i>0.202</i>		<i>0.000</i>

Table 4. Reliability of the instrument.

Number of cases	Number of organizations	Value of alpha
70	24	0.9539

results of IT projects ($P < 0.05$, $F = 19.947$, $R^2 > 0.7$ and Standard error < 1.0). Table 3 indicates that individual β coefficients for the independent variable remain positive. It is evident that stakeholder communication plays as a significant factor for the project result of IT projects as it is positively correlated with it. In Table 3 the respective t value depicts the relative importance of the independent variable for project result. Stakeholder communication possesses high importance for the project result ($t > 1.0$). Table 3 further confirms that the regression between stakeholder communication and project result remained highly significant within the selected sample ($P = 0.000$ and $R^2 > 0.7$). This regression result is interpreted under assumption that the essential knowledge areas and prerequisites for the projects were kept intact. Table 3 further clarifies that stakeholder communication singularly shall not be an effective factor for project result if other determinants are not kept intact ($P = 0.202$) (Sekeran, 2000; Cooper and Schindler, 2003). These findings enable this study to substantiate its H_2 which states stakeholder communication in real practice of project management is not a secondary function in importance.

In acknowledgement of the significance of stakeholder communication, Schwalbe (2010) and 'Formal project management methodology gives considerable competitive advantage', (2006) stressed structuring stakeholder communication through well designed documentation provided it does not increase extra paper work. Schwalbe (2010) advises that project managers should employ well designed forms and documentations for project communication management. The study interpreted that within three forms/templates, a project manager will fulfil the minimum documentation requirement for IT projects.

This study, therefore, realized that three templates should be designed and contributed for helping project managers in structuring their stakeholder communication activities.

Conclusion

Based on the aforementioned findings, the study interprets that both its hypotheses H_1 and H_2 are rational and hence it substantiates them. The study infers that stakeholder communication is one of the significant determinants of project success which should not be considered secondary in routine project management practices. The study acknowledges that all the rest of the knowledge areas and prerequisites for project success should also be maintained simultaneously and only then

the good quality in stakeholder communication will help. For example, if good quality human resources are not hired to form the project team, good quality in stakeholder communication singly will not be helpful. Similarly, all other knowledge areas are important. The study concludes that the significance of stakeholder communication is not secondary and hence it should not be declared secondary or a support function for project management. As per the findings of this study, the stakeholder communication is one of the key factors for defining the scope, time, cost and quality standards for an IT project effectively. The study thus recommends considering stakeholder communication as one of the primary tools for leading the management of primary functions of the project that are scope, time and cost.

RECOMMENDATIONS

This study observed and interpreted that the stakeholder communication for projects is exercised through inter-team meetings/reporting and stakeholders meetings. Providing no schedule for inter-team communication (meeting/reporting) to the team members with a well-defined format for any weekly or monthly reports cannot guarantee effective inter-team communication that a project requires. Further, the study learnt that the project manager interprets project scope, time and cost at the initiation phase of a project through regular, detailed and useful meetings with the clients, end users, project's sponsors and top management of the organization undertaking projects. The know-how of compatible Industrial norms and standards also helps project managers in understanding the scope, time and cost requirements of a project effectively. The study, therefore, recommends that a project manager must consider management of stakeholder communication as one of the primary tools for manipulating the project's scope, time, cost and other knowledge areas well.

As this study has identified stakeholder communication as one of the key factors to manage all the other eight knowledge areas and lead HR throughout the project life cycle, therefore it contributes the following guidelines for the project managers in this context:

1. Projects managers must provide inter-team communication as well as a stakeholder communication schedule during the Project Planning Phase. For this purpose, they may utilize the Template A provided in Appendix 1 or may design similar format as applicable for their project

or organization. Template A is designed to ensure flow of information among stakeholders within the team in a structured manner ensuring adequate quality and quantity of the information. Project manager needs to ensure that it remains the adopted conforming project schedule. It is suggested that inter-team communication should be scheduled as weekly or monthly or at least near (two weeks to) milestones. For different projects the required frequency of inter-team communication can certainly vary. Stakeholder communication could occur less frequently. The beginning of every phase or the end of every phase is the most appropriate time periods for scheduling meetings among all the stakeholders. The study recommends using Template A for the purpose and keeping it public at the project planning phase so that all stakeholders remain synchronized. Once a meeting is to be conducted, its agenda must have been defined in advance. Every stakeholder meeting should ideally be minuted for reviewing progress in future.

2. Inter-team communication can occur both through meetings as well as reporting to seniors through emails, etc. A balance of both the approaches should be used. For example, meetings near milestones with reporting at the end of every month or week could be adequate for a project needing six months time with 4 to 5 milestones. However, project managers must decide about the frequency of inter-team communication considering the project's length, complexity and team's strengths. As too many meetings remain counterproductive, frequency of inter-team meetings must be appropriately set.

3. For meetings, managers should select the venue and timings that remain suitable to all the team members. Project manager should entertain gender, cultural and regional limitations in this regard and must remain flexible as applicable. Like females better not be forced to attend late night inter-team meetings in the culture of Pakistan.

4. For reporting (weekly, monthly or other), reports must be designed. Manual reports can be used but software reports had better be preferred. This study contributes Template B and C provided in Appendix 2 that the project managers may adopt for Report from the Subordinate and Information from the Super-Ordinate respectively. The study contributes these templates so as to help project managers structuring the stakeholder communication. Even if not adopted, at least these templates shall certainly guide the project managers to structure the stakeholder communication adequately by designing similar formats for reports. The study is confident that the use of template B and C will ensure simple paper work and proper documentation of activities performed. This shall further help in monitoring performance.

5. Project manager must use an appreciating and reforming approach while communicating with his/her team both in oral and written modes. Appreciating the work of team members boosts motivation and avoids disruptive stress. Overall, a project manager must be such a facilitator for his/her team that every team member finds it

appealing to approach the project manager for all work related as well as personal issues. Simultaneously, the project manager should ensure, in a polite and friendly manner, that there exists an acceptable level of stress on each member which keeps him/her motivated enough to stay committed with the assigned tasks.

The study has contributed the sample templates to ensure a structured documentation and format for the project information related to all its necessary affairs. The study finds testing the recommended templates an opportunity for further research.

FUTURE RESEARCH

The template that this study has contributed triggers the opportunities to test them through further research in the fields of project management, stakeholder risks etc. The findings of this study further enable researchers in the relevant field to explore more about the significance and importance of the stakeholder communication for managing project time, scope, cost, risk and quality. The study perceives that testing its recommendations by applying in the real project management exercises shall enable practitioners conduct and contribute further improvements in managing the triplet constraints, quality and risk for projects.

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APPENDICES

Appendix 1

Template A

Schedule for stakeholder communication

Project title: _____

Guidelines:

Fill as directed during the project's planning phase. Add as many rows as needed.

Event/Occasion	Mode of communication	Agenda	Participants	Venue	Duration
Like	1. Meeting	Like	1. All Stakeholders	Like	Like 2:00 pm to 3:00 pm on 30/06/2006 etc.
One week before first Mile Stone	2. Teleconferencing 3. Video Conferencing 4. Emailing 5. Chatting 6. Informal telephonic talk 7. Other	Finalizing Project scope, Time and cost	2. All team members 3. Selected Members: _____ (Mention names)	Sponsor's Environment or In Office, etc.	

Appendix 2

Template B

Report from subordinate

Project title: _____

From: _____

To: _____

Date: _____

Time: _____

Guidelines:

Direct all team members to fill this template essentially either weekly or monthly or as best suits your project. However, remember that too much documentation may decelerate progress. Add as many rows as needed.

Task	Progress	Issues (If any)	Suggested remedies/Required resources
Like	Like	Like	Like
Analysis under execution (Task number 14)	50% accomplished	End user is non-technical Or Nil	Let us use prototyping for analysis Or Nil
....

Template C

Information/Inquiry from Super-ordinate

Project title: _____

From: _____

To: _____

Date: _____

Time: _____

Guidelines:

Direct all super-ordinates in your team to use this template when needed. However, remember that too much documentation may decelerate progress. Add as many rows as needed.

Issue/Inquiry/Information	Instructions or suggested actions
Like	Like
Client site validation check is missing in file X	Code client site validation check using java script for all fields in file X no later than 23/07/2006
....