

ANALYSIS AND RESULTS

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The purpose of this study is to investigate the influence of effective communication in the success of software project implementation. The results of this research could help research, academicians and SW among other professionals to understand the importance of effective communication in illuminating the relationship between supervisory roles of executives and the roles that employees have in software projects and in other projects as well. The results can also be important to organizations in the provision of clear strategies to help in the provision of the employees and executives with effective ways of communication that can lead to success in SW projects among other projects.

This research was carried out using different methods that included a survey of the current literature on how effective the communication processes are in influencing the success of the software project implementation. A questionnaire and an interview were also rolled out to test the research questions developed for this study. The data for this research were collected both from secondary and primary sources. As stated earlier in chapter three, within project communication processes, communication occurs in different ways that features three forms including verbal, written and non-verbal forms. Thus, the use of both primary and secondary sources of data was meant to ensure that all forms of communication in software projects are documented to reach an objective finding in this research.

The questionnaire and interviews were rolled out to professionals in SW project implementation in terms of their grading from 5-10, which featured 5 technical leads, 6 testers, 7 deputy managers, 8 head of section, 9 head of department and 10 executives. The results from this section was compiled with the help of excel sheets. The results were compiled in terms of the number of responses and responses to the questions asked. The frequency tables show the response rates to different questions in terms of numbers, percentages and graphs that show

results of the responses. The percentages are on a scale of 0-100. The responses to questions put on a scale of 1-5 where 1 represents least important/ strongly disagree/ very dissatisfied/ significantly ineffective and 5 represents very important/ strongly agree/ very satisfied/ significantly effective.

With respect to the interviews, this chapter reports the recipient's perceptions of the importance of effective communication to SW project implementation by featuring their responses to different questions about communication in an IT department working on SW projects. The qualitative data that is analyzed first by identifying themes or patterns in turn present ideas, interactions, incidents or behaviors recorded in the data collection




Research question one

The first research question asks whether effective communication is an essential part of the SW project implementation process. To find out information on the research question, a literature review was conducted as part of the data for the study from secondary sources. The literature review was conducted from a variety of sources from different authors who have written extensively on communication in Software projects among other projects. In this research question, the sources reviewed address issues of developing networks and integrated views in projects through communication. This was to reveal whether communication has any importance in SW project implementation especially in developing these networks among employees and executives in those projects (Allen, 2008:7). SW project implementation is complex because it requires a balance between its mechanical components controlled by professionals in implementation. As such, the review of sources was done to find out whether communication initiates and helps maintain this balance and as such establish whether such a balance as supported by communication is an essential aspect in SW project implementation. The review of

sources was also meant to contribute to the understanding of this research question by establishing a link between systems thinking and management of complex situations through communication in SW project implementation. In this review, Atwood, et.al (1995) helped in the analysis of this relationship (Atwood, et al. 1995:66). This was included in the data collection because the source presents models as means of communication that system thinkers use to breakdown complex aspects in SW project implementation. Other sources also considered in this research question address issues about integration of different segment processes, representation of knowledge, communication of timing, solving of problems and procurement issues all of which are done through communication. All these sources reveal that communication is an essential aspect in SW project implementation.




A questionnaire was also rolled out to test the research questions. To test the research question, several questions that relate to it were included. Examples of the questions asked were how important is effective communication in general? How important is effective communication according to you in Software project implementation?, and how satisfied are you with the communication according to you in Software project implementation in your organization? All these questions were asked to find out whether effective communication is an essential part of the SW project implementation process. Respondents were asked to rate their answer on a scale of five where 5 was very important and 1 was not at all important. The response rate for the questions was 100 percent. With respect to the first question, which was how important is effective communication in general, out of 55 respondents 46 respondents responded by rating it as very important which was equal to 83.64 percent. A further 9 respondents rated it as important that translated to 16.36 percent. With respect to the second question, which was how important is effective communication in Software project

implementation, out of 55 respondents 32 respondents responded by rating it as very important which was equal to 58.18 percent. A further 23 respondents rated it as important that translated to 41.82 percent. With respect to the third question, which is how satisfied are you with the communication according to you in Software project implementation in your organization?, 13 respondents ranked the question as very satisfied which translated to 23.64 percent, 29 respondents ranked it as satisfied translating to 52.73 percent. 8 respondents ranked it as neither satisfying nor dissatisfying translating to 14.55 percent and a further 5 respondents ranked it as dissatisfying representing 9.09%. The graphs below show the above results respectively.

Q3.Please select the appropriate answer				
3(a) : Please select the appropriate answer: Importance of effective communication				
Responses	Count	Assigned Weight	%	Percentage of total respondents
Very Important	46	5	83.64%	
Important	9	4	16.36%	
Neither important nor unimportant	0	3	0%	
Not Important	0	2	0%	
Not Important at all	0	1	0%	
(Did not answer)	0	NULL	0%	
Weighted Score : 4.84				
Total Responses	55			






Graph 1.

Q4.Please select the				
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appropriate answer				
4(a) : Please select the appropriate answer: Importance of effective communication in Software project implementation				
Responses	Count	Assigned Weight	%	Percentage of total respondents
Very Important	32	5	58.18%	
Important	23	4	41.82%	
Neither important nor unimportant	0	3	0%	
Not Important	0	2	0%	
Not Important at all	0	1	0%	
(Did not answer)	0	NULL	0%	
Weighted Score : 4.58				
Total Responses	55			

Graph 2.

Q5.Please select the appropriate answer				
5(a) : Please select the appropriate answer: Satisfaction with communication in Software project implementation				

Responses	Count	Assigned Weight	%	Percentage of total respondents
Very Satisfied	13	5	23.64%	
Satisfied	29	4	52.73%	
Neither I Satisfied nor Dissatisfied	8	3	14.55%	
Dissatisfied	5	2	9.09%	
Very Dissatisfied	0	1	0%	
(Did not answer)	0	NULL	0%	
Weighted Score : 3.91				
Total Responses	55			

Graph 3.

An interview was also conducted to ascertain the importance of effective communication in SW project implementation. Different questions were fielded to the 3 respondents featuring a variety of questions that all aimed at reaching a conclusive finding of whether effective communication is an important attribute to SW project implementation. The questions asked about personal contribution to SW project implementation in terms of communication, the importance of communication to outcomes and results, development of technical skills and knowledge and decision-making among other aspects. The results from this interviews show that communication is an essential aspect of SW project implementation. For example, in an interview featuring an executive, he was asked one question on decision-making, which was, does your department engage in communication before decisions in software project implementation. The executive agreed. When giving an example, he stated, “Before we start software project implementation, a series of communications must take place with regard to addressing issues of resources, personnel, infrastructure and benefits to the company. This communication helps in the ultimate decision-making process.” Similarly,

interviews given to two employees in a Software company reveals that the two are in agreement with the executive with respect to the importance of communication, for instance in decision-making. The employees were asked the same question with the executive and they agreed that communication plays a significant part in decision-making in SW project implementation. This response among others that are put in the appendix show the importance of communication in SW project implementation.

Research question two

The second research question asks how factors such as channels, completeness of messages, presentation and mediums affect the outcomes of an SW project. When testing the effect of effective of communication in the success of SW project implementation, it was also important to test the factors that contribute to the effectiveness of communication in SW project implementation as opposed to a blanket analysis of effective communication itself on successful SW project implementation. This would help in understanding whether channels, mediums and presentation of information among other aspects of communication contributed to effectiveness of communication and in turn, success of SW project implementation. In the literature review, these factors were analyzed from various sources. For example, a source by Kyriazis & Massey, (2008) reveals that while formal communication is significant between the management itself, and with the teams and individuals present in a project, the consideration of the informal aspect. This channel of communication should be encouraged, as it has key advantages that may not be present in a formal setting (Kyriazis & Massey, 2008:7). This supports the notion that the channel of communication contributes to the success of an SW project. Another source by Allen et.al, (1985) reveals that all through a project's life cycle, the quality of communication can be defined as the level at which appropriate information flow reaches in apt time to the intended

receivers. This means that the most important aspect of project communications does take place where the sender captures the pertinent interests of the receiver during the encoding process (Allen, et al. 1985:76). This source is in agreement with the research question in the sense that the receiver of information must clearly understand the sender of the information for clarity and thus, the effectiveness of communication and SW project implementation. This examples among the other sources in the literature review give a clear insight into the manner in which different factors of communication lead to the effectiveness of communication that contribute to the success of an SW project implementation.

In the questionnaire, these factors were measured as attributes. Respondents were asked to rank several attributes in effective communication in SW project implementation on a scale of 1-5 where 1 represented not at all important and 5 represented very important. Table 1 below shows the Responses and the percentages of the responses.

How important is the following attributes in effective communication according to you in Software project implementation? Rate your answer on a scale of 1 to 5 where 5 is very important and 1 is not at all important.															
Q6. Please select the appropriate answers															
		Very Important		Important		Neither important nor unimportant		Not Important		Not Important at all		Did not answer		Total	Weighted Score
(a)	Clear, Concise message	3	3.64%	6	4.55%	3	1.82%	1	0%	0	0%	0	0%	55	4.62

(b)	Understanding of the recipient	29	25	25	44	11	11	0	0	0	0	0	0	55	4.51
(c)	Empathy for the Recipient	71	38	28	58	18	21	30	0	0	0	0	0	55	4.09
(d)	Effective Listening	32	51	21	33	22	30	0	0	0	0	0	0	55	4.55
(e)	Asking for Clarification, when Necessary	23	40	30	55	11	11	1	0	0	0	0	0	55	4.36
(f)	Adherence to the Facts	22	40	30	55	33	50	0	0	0	0	0	0	55	4.35
(g)	Provision of Proper Feedback	25	42	26	44	33	51	1	0	0	0	0	0	55	4.36
(h)	Inclusion of Praise, when Appropriate	18	30	30	56	60	10	0	1	1	0	0	0	55	4.16
(i)	A Positive Attitude	22	42	29	54	44	70	0	0	0	0	0	0	55	4.33

(j)	Adequate briefing of the recipient	19	33	33	66	53	50	0	0	0	0	0	0	55	4.29
(k)	Accurate plan of objectives	36	69	19	30	0	0	0	0	0	0	0	0	55	4.65
(l)	Reliability and uniformity of the message	28	54	24	43	33	50	0	0	0	0	0	0	55	4.45
(m)	To know the main purpose of the message	27	47	27	44	11	10	0	0	0	0	0	0	55	4.47
(n)	Correct timing	26	45	25	44	44	70	0	0	0	0	0	0	55	4.40
(o)	Use of proper medium to convey the message properly	24	46	26	44	55	90	0	0	0	0	0	0	55	4.35
(p)	Use of informal	17	35	25	41	11	21	11	11	11	0	0	0	55	4.02

communicat		%	%	%	%	%				
ion										

Table 1.

From this table, it is clear that from the responses that factors such as channels, completeness of messages, presentation and mediums affect the outcomes of an SW project. As can be seen, most respondents ranked the attributes with a 4 or 5 meaning that these attributes are either very important or important in SW project implementation.

The questionnaire also asked the communication mediums that are important for effective communication in Software project implementation. Five options were given that included email, group meetings, telephonic discussion, video conferencing and information discussion. The respondents were asked to rank the most important to the least important medium of communication on a scale of 1-5. Table 2 below shows the results from the questionnaire.

Q13. Which communication mediums are important for effective communication according to you in Software project implementation? Please rank them according to their importance.							
	Group meetings	Email	Telephonic discussion	Video conference	Informal discussion	Did not answer	Total
Rank 1	28	17	3	4	3	0	55
Rank 2	15	17	17	4	2		
Rank 3	6	12	20	9	8		
Rank 4	2	7	12	15	19		
Rank 5	4	2	3	23	23		
Weighted Rank (Score)	1 (226)	2 (205)	3 (170)	4 (116)	5 (108)		

Table 2.

From the table, it is clear that these mediums are important

An interview was also given with questions on such attributes as style of communication, approaches to communication and attention to detail. From the interviews of the executive and the two employees, it is clear that the organization has a style of communication and approaches to communication play an important role in effective communication in SW project implementation.

Research question three

The third research question asked whether a lack of effective communication affect how successful an SW project will be. Results from the literature review indicate that a lack of effective communication affects the success of SW project implementation. for example, a source by Eckert & Clarkson (2004) reveals that because of the diverse nature of all interest groups involved, it is usual for both the indirect and directly parties to construe project operations differently and without communication, they would hinder a project success (Eckert & Clarkson, 2004:378). Mehta (2002) supports this by acknowledging that project communication that is effective creates an atmosphere of both attachment and responsibility, between project tasks and the stakeholders present (Mehta, 2002:54). The results from other sources too (Gichoya, 2005:177; Borrill et al., 2000:179 and Baccarini, 1996:201) all indicate that effective communication is an integral part of SW project implementation.

In the questionnaire, the research question was measure by asking questions that would indicate what happens when effective communication is part of the SW project implementation.

Table 3 below shows the results from the questions asked.

How much do you agree or disagree on the following attributes in effective communication according to you in Software project implementation? Rate you answer on a scale of 1 to 5 where 5 is strongly agree and 1 is strongly disagree.

Q7. Please select the appropriate answers															
		Strongly Agree		Agree		Disagree		Strongly Disagree		Did not answer		Total	Weighted Score		
		No.	%	No.	%	No.	%	No.	%	No.	%				
(a)	Communication is the basis for any software project implementation	27	9.09%	46	7.27%	42	64%	30	0%	0	0%	0	0%	55	4.45
(b)	It helps in smooth and efficient working of an project	23	1.82%	40	4.55%	52	64%	33	0%	0	0%	0	0%	55	4.38
(c)	It facilitates co-ordination amongst team members	24	3.64%	41	6.36%	50	0%	0	0%	0	0%	0	0%	55	4.44
(d)	It increases managerial	14	5.45%	26	5.45%	65	109%	90	0%	0	0%	0	0%	55	4.16

	efficiency		%		%											
(e)	It minimizes the chances of error	19	4.55%	30	4.55%	56	0.91%	10	0%	0	0%	0	0%	0	0%	4.24
(f)	It motivates employees and increases employee morale	15	7.27%	22	8.18%	56	0.91%	12	.64%	30	0%	0	0%	0	0%	4.09
(g)	It helps in effective control of the entire operations of the project	26	7.27%	43	1.82%	46	0.91%	10	0%	0	0%	0	0%	0	0%	4.36
(h)	It helps in achieving the desired goal effectively	23	1.82%	40	4.55%	52	.64%	30	0%	0	0%	0	0%	0	0%	4.38
(i)	Lack of effective communication affects how successful a	23	1.82%	49	2.73%	53	.45%	50	0%	0	0%	0	0%	0	0%	4.36

software																				
project will																				
be																				

Table 3.

From a general overview of table 3, it is clear that a lack of effective communication actually affects an SW project implementation. Results from the interview of the two employees and one executive also reveal that lack of communication would be detrimental to SW project implementation. all questions asked were about the function of communication in SW project implementation and results reveal that communication is important in every way to SW project implementation for instance in terms of decision-making, innovation and creativity, flexibility and initiative and in leadership and management among other aspects.

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