

Communications Is the Key to Project Success

by Jeff Hodgkinson

It seems to be the root cause of the success or failure of a project to deliver the expected results to the stakeholders always comes down to one item – ‘communications’. How well the project team performs is directly proportional to the timeliness and effectiveness of the teams’ ability to communicate status among each other. Go back and look at project postmortems, or PIR’s (post implementation reviews), or the new politically correct term of ‘project retrospectives’ and you’ll find a reference to ‘lack of’ or ‘mis-communications’ referenced in some manner or form. Research has proven that when projects fail, someone in the team knew it was going to happen beforehand – but because no one asked the knowledge could not be acted upon.

Between 1967 and 1975, The US National Aeronautics and Space Administration (NASA) embarked on perhaps the most grand and complex project to date – landing men on the moon with the Apollo Program. From creating launch and recovery vehicles to completing a risk assessment of landing on the lunar surface – all of the communication was completed with typewriters and rotary dial phones. It seems amazing these days then, with audio bridges, Livemeeting, email, SharePoint, communicator, and other modern collaborative tools we use that any issues in communication could happen.

However I believe it comes down to one simple equation that any good program and project manager should know which is: $N(N-1)/2$. Some readers who are credential-holders will recognize this as the standard communications formula where ‘N’ equals the number of team participants.

Using the formula, let’s take an example with a small project team of 5 people where the formula calculates that there are 10 possible channels of communication as: $5(5-1)/2 = 5(4)/2 = 20/2 = 10$. So for the PM must ensure that 5 people on their team are communicating real time and there are no gaps in everyone’s understanding that they need to manage only 10 communication channels among the team. Fairly easy to do. However, let’s look at examples as the project team grows.

# of Project Team Members	# of Lines Of Communication	# of Project Team Members	# of Lines Of Communication	# of Project Team Members	# of Lines Of Communication
6	15	15	105	50	1225
7	21	20	190	75	2775
8	28	25	300	100	4950
9	36	30	435	200	19900
10	45	35	595	500	124750

If you double the size of your project team from 5 to 10 people the number of communication channels increases 4.5 times from 10 to 45. Another way of stating it and in reality what it means is that the PM needs to theoretically spend four and a half times the effort to ensure the project team of twice the size keeps informed. Think about it – one of the biggest challenges a project manager has is to keep everyone on the team in lock step as to the project status at any point in time. If one person on your team misses a piece of key information then that can have an impact on others or the whole team. If a team member has to check with more members of the team to get something done then that often not only increases the time to do the task (often to get consensus) but the potential risk that it will take if a single team member is miss informed in some manner along the way.

Following the chart above, expand the team from the original 5 to 20 members (or 4 times the members) and the lines of communication increase nineteen times! Now the majority of the PM's time in managing the project is consumed in effectively communicating with the team members and almost guaranteed that now 'Team Leads' are required to help optimize the traffic flow of detail. Any more than 20 people on a team and the whole approach to the project changes and most likely the project manager is now acting and performing tasks of a program manager. Further, a project type of organization with Program and Project Managers, Leads, etc. starts to be clearly recognizable.

The person in charge of the project or program now clearly depends on several others to help ensure all the team members' messages are answered. We are not referring to just phone calls and emails but any and all tasks performed on the project as anything required to complete the project regardless of the size and scope has some eventual impact to the project outcome – positively or negatively has some impact understood. Keep in mind for project and programs the tools used such as project schedules, meeting minutes, metrics (PM Dashboard), and Teambuilder are also a means of project communication and the larger the team the larger the opportunity for something to be wrong and therefore time spent not only in communicating the problem but in successfully resolving it.

Looking at the size of a project team in tiers from a different perspective you can directly see the difference in approach:

Project Team Members	Potential Lines of Communication	Project Team Dynamics	Communication Role of the Project Manager
2 to 10	45	<ul style="list-style-type: none"> • Small team and everyone knows each other and responsibilities often overlap. • The groups work more informally and statistically very successful in meeting planned objectives. • FaceToFace and/or 1:1 contact with everyone is frequent. There is a high degree of socialization. 	Fairly easy to keep everyone informed
10 to 25	300	<ul style="list-style-type: none"> • Medium-sized team with varying relationships. • PM needs to have structure and often depends on leads for specifics areas. • Not everyone sees or talks to everyone else for varying periods of time. Still a fairly social environment. • Communications are more written in nature to ensure everyone is clear and to provide records. 	Need to keep a good focus and dedicate time to ensure everyone is informed
25 to 50	1225	<ul style="list-style-type: none"> • Large team and more of a program team than a project team as a layer of management needs be provided. • Meetings with key individuals then subsequent meetings with their team. • Most likely one or two specialized roles that drive adherence to processes and expectations. 	Primary task of the position and detail have to be delegated to ensure effective

		<ul style="list-style-type: none"> • Lots of email traffic generated with everyone copied vs. need to know. • People know their group and are aware of the others on the team. • Interface with those they need to for completing the task at hand. • Recommended configuration management. • Team can easily become dysfunctional if everyone is not clear about roles. 	
50 to 100	4950	<ul style="list-style-type: none"> • Very large team; there are focused efforts to keep everyone aligned. • Open forum type progress meetings required. • Communications are centralized from the senior manager. • Several people have specialized roles. • Requires good configuration management. • People spend up to 20% of their time just keeping informed. 	Focus on ensuring the 2 layers of project management under you are clear
Over 100	Infinite	<ul style="list-style-type: none"> • Same applies as above however communication time is in reality more like 30% of a persons' time. • Each person as the minimal communication risk as a 15 person team alone. 	Challenge to ensure the first management layer is clear

What I am sure you will conclude is that the project manager with a 5 to 10 person team cannot work in the same manner with a 100 person team however it is the requirement of the manager and the expectation of the team members to be real time informed and also have their issues and concerns addressed (answered) in a timely manner. Intel 'span and control' guidelines recommend 8 to 12 people for managers and it goes about the same for the project manager of a project team. There is little difference really between a business organization and a project centric organization in the requirement to communicate effectively to all in the department or team.

To the point and purpose of this article is for the Project Manager to always weight the benefit of adding another member to your project team. If that team member is dedicated only a small percentage of their time to your team you and your other team members still need to spend the time and effort to communicate with that person the same as if they were full time. Remember there are no decimal points (referring to <1 H/C) in the $N(N-1)/2$ calculation. It does not work that way. In project metrics the 'Fragmentation' or percentage people dedicated at least 75% to one project is looked at because a person being 'peanut buttered' across several projects is not only ineffective of itself but requires time from other directly working with and managing that person. As the saying goes, "Trying to do too many things is the mark of ineffective people..." . The goal with fragmentation is to minimize the conflict between managing the work and doing the work itself.

In closing I'd like to give you a task. It will only take a few minutes to complete the steps.

First: count the number of all the people in your program or project team and do the calculation. Let me use 17 for example so $17(17-1)/2 = 136$ lines of communication.

Second: Review your Calendar and email 'inbox' and 'send' for the prior week and filter for the emails created directly for your project and count the # and then estimate the total time in minutes you spent reading and responding to those emails. Being a savvy project manager you can use the PERT estimate calculation of: $(\text{Optimistic} + (2 \times \text{Most Likely}) + \text{Pessimistic}) / 6 = \text{Estimated Time Spent on Emails for the week}$.

Third: Review your Outlook Calendar for the same week and add up the total time in minutes spent in meetings including 1:1's with team members directly related to the project.

Fourth: Add up the email estimate time and the calendar estimate time to give you the total # of minutes spent and then divide by the # of project team members. Convert minutes back to hours and that gives you an indication of the time you dedicate to each person on your team.

So for example, if you estimated 822 minutes of email and 570 minutes of meeting time, then: $822 + 570 = 1392$ total minutes ... $1392 / 17 = 82$ minutes per person or let's say an hour and 20 minutes per person.

Lastly take a goal to reduce the time you spend on average communicating on average per project team member without compromising the quality required. Even if on 5 minutes or in our example: $82 - 5 = 78$ minutes.

Think of actions you can do to reduce that time starting with affirming that all project team members need to be on your time still at this point in time. Continue those strategies for 5 weeks and then redo the steps above and see if you met your goal. Here are some ideas to get you started in identifying your own personal time savings techniques. Of course, not all of them will work in all situations – but perhaps they will provide you a place to start:

- Communication Blackout Periods – or “You Know That Outlook Actually Closes, Right?” – there is nothing that states keeping your email available at all times. Consider closing your communication tools one hour a day to get more work accomplished.
- Get A Conference Room... For Yourself – or “They Can't Bother You If They Can't Find You” – If you've got a particularly detailed piece of work to accomplish such as a straw man for your project's charter, consider getting a small conference room to eliminate random cube visits and to lower distractions from other's phone conversations. Or work from home.
- Consider 30-minute 1:1s – or “This meeting self destructs in 30 minutes...” Data will fit the pipe. If you give your project team sixty minutes, the conversation will take that long. Many times shorter meetings have the same number of high quality deliverables in half the time.

For more information

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