

## Intracompany social media support for a SAS Grid migration

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### ABSTRACT

In 2016 RTI International migrated over 400 SAS users from SAS on PCs and several stand-alone Linux servers to a SAS Linux Grid. Despite best efforts, pre-migration company-wide training could not cover every potential topic. In addition, post-migration support from IT was necessarily focused on issues of base functionality. For specific programming issues to be addressed with expediency it became necessary then for new methods of communication and collaboration to arise. But how to best do this when these 400 users spanned several departments with limited historical communication between them? In response, staff began to use social networking applications like Slack and Yammer and created an internal migration support community. In this presentation, we'll cover how the limitations of company-wide approaches led to innovative solutions that gathered together a diverse internal community to better problem solve and share knowledge. We will also discuss how those solutions evolved over time and both their strengths and limitations.

### INTRODUCTION

RTI had examined moving their SAS installation base from one dominated by individual PC licenses to one dominated by a server based version for many years. In 2015, it was decided that the combination of the current market forces and the functionality of the SAS Linux Grid product, referred to as "SAS Grid" from here on, made it the time to move forward. RTI planned to use the majority of 2016 to set-up, test, adjust, and finally migrate staff to the SAS Grid.

Even in the best of circumstances, with a localized staff who do similar work and who can be migrated all at once to a new product that is nearly identical in form and function, software roll-outs can be difficult. Testing cannot cover all situations staff may encounter and it is rare that work can be halted while issues are resolved. In more challenging circumstances, these problems are compounded.

RTI is a research company with a diverse set of staff, who use SAS for many different applications across many different projects. Over 400 staff, encompassing 19 divisions, 6 units, and 2 groups, would be transitioned. The staff were located in 9 offices across the United States, and also included over 50 telecommuters in three different countries. The data these staff used was stored in over 1300 individual project shares across a half-dozen directories. A portion of this data was under strict security requirements that necessitated a different method of access. Because of all these issues, and to test the SAS Grid itself as the number of staff with access grew, it was decided that staff would not be migrated all at once. Instead migration was done slowly across multiple groups over the span of several weeks (Wilson, Green, and Terminiello, 2017).

While this was the best solution given the circumstances, such a spread-out migration creates communication issues. SAS Grid was functionally different from PC SAS in crucial ways that staff would need to learn before the transition. However, different groups would begin accessing the SAS Grid at different times for many different reasons. A training that would be ideally timed for one group may be too early for another, and too late for a third. While that may be mitigated by more trainings, the geographic spread of the population, along with work obligations, made scheduling more in person trainings challenging. What might work for a typical software update would be woefully inadequate for this type of transition.

In this paper, we will review the initial communication methods used in the migration to the SAS Grid. We will discuss the deficiencies of these communications methods and how the enterprise social network addresses these issues. We will review how our staff used the enterprise social network during the migration period and try to determine if the use was beneficial. We will then end with a discussion of potential issues that may have impacted our results and our final recommendations.

## INITIAL COMMUNICATION EFFORTS

### METHODS

In response to the communication challenge, the SAS Grid technical committee used many of the standard methods of communication to inform staff of what they needed to know. Some methods started during the pilot testing phase.

- The technical committee set up a SharePoint site where all information would be available to committee members
- ITS created a virtual support room to troubleshoot issues as they happened using screen sharing
- The pilot testing group held focus group meetings where testers could share their experiences.

This continued into the official roll-out where the committee expanded to other methods:

- The steering committee asked its members to disseminate information through regular staff communications
- The technical committee sent emails to large populations of staff, eventually evolving into an monthly SAS Grid newsletter
- The technical committee created a FAQ on an intracompany website, eventually expanding into a landing page. Here are some examples of the links included:
  - The SAS Grid roll-out schedule
  - Archived SAS Grid newsletters
  - Specific SAS Grid “Tech Topics”
  - RTI created SAS Grid Utilities
  - The SAS Grid training information and schedule
  - General SAS Grid and SAS information
  - SAS Grid tutorials
  - Email contact information for SAS Grid transition project leaders
- The business divisions scheduled informal “brown bag” seminars and lunches where topics could be presented and discussed in an informal setting
- The technical committee scheduled Town Hall Meetings where staff members were encouraged to ask questions and participate in an open forum

### ISSUES

While the attempts at communication were close to exhaustive it was still understood that despite best efforts many staff would not be properly informed by these methods.

Trainings can be very effective but are usually broad in their scope because they must address the issues pertinent to the most staff. This makes them helpful learning basic information but unable to provide much guidance for specific problems. Broadcast methods of communications, which attempt to hit many staff in one burst, can be effective but only if the message is clear and singular. Unfortunately, in large companies emailed broadcast communications can come quite often inuring staff to their importance (Whitaker and Sidner, 1996), while in person broadcast communications (e.g large staff meetings) often ask the staff member to take in a large amount of information at one time, making it easy to lose track of any singular piece. Methods of communication where the staff must resolve the problem themselves, like searching through a list of FAQs or watching a set of videos, can often leave the staff member feel overwhelmed or unable to piece together a specific solution. They are very dependent on the staff's ability to locate information. Specific trainings such as brown bag lunches are most effective at tailored solutions but still demand a commitment of time that the staff member may not be able to give when asked. Even the most thorough set of specific trainings cannot hope to cover every topic.

The goal then would be to cover this gap in assistance and find some method of communication where the staff could receive specific solutions in a timely manner.

## INTRODUCTION TO ENTERPRISE SOCIAL NETWORKS

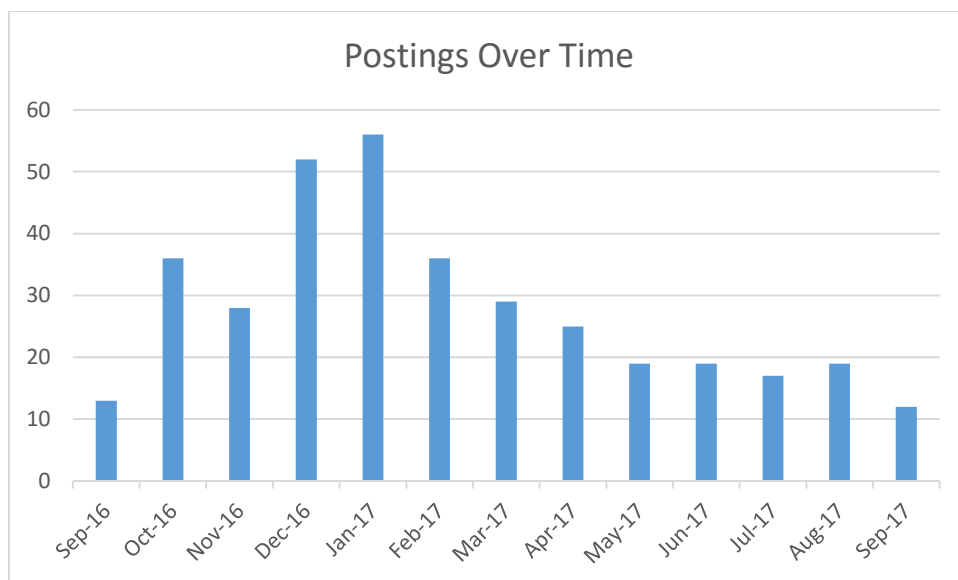
In June of 2016, the SAS Grid pilot testing group found it unwieldy to discuss issues through the standard office email. One of the members suggested that the group use an enterprise social network for communications. The benefits of enterprise social network were well known. They are designed for grouping conversations minimizing the difficulties in finding relevant communications among other work communications. They use an opt-in system that makes it more likely that staff members are following a topic they are actively interested in. They keep a historical record of all conversations on the topic allowing staff new to following a topic to catch-up on previously discussed issues and information from departed staff to be maintained. It is true that everything above can be approximated through proper maintenance of email groups. However, because of their specific designs it is often a far more straight forward and stable process with an enterprise social network than under email (Chui et al. 2012). For example, upgrades to the programs or the operating system rarely disrupt the groupings in a way that would require work from the staff to set-up again. Like many companies, RTI was exploring various applications trying to decide on which software to land. Slack was one of the more popular choices at the time and the pilot testing group decided to move forward with that software.

The pilot testing group found the software a far easier method to share information and found the distinction between it and the standard email communications important. The group noted that we should continue using this, or a similar software, when the migration was expanded to all staff. This was agreed upon by RTI, however, it was requested that we use Yammer instead of Slack.

## ADOPTION OF ENTERPRISE SOCIAL NETWORKS

The shift from Slack to Yammer, a similar enterprise social networking application was made in September of 2016 by request of ITS. Yammer, a Microsoft product, was supported by the IT department, while Slack was not. Staff were invited to join in a series of groups. The technical committee was invited first starting the group with 25 members, the pilot testers were added a few days later adding another 13 members. A few days after this, the invitation went out to all members of our SAS Grid Users email group, which was roughly 400 staff (including most, if not all, staff previously invited). The invitation was repeated several times after that in other communications. It was added to the monthly newsletter, included in the email that informed staff they had access to the GRID, and discussed with them during roll-out training. By December 6<sup>th</sup>, after nearly all staff had been migrated, 179 staff were members of the group. On January 6<sup>th</sup>, it was decided to add all staff to the group passively. Today there are 445 members. There are no more automatic additions, however staff are strongly encouraged to join upon gaining access to the SAS Grid.

We can see the growth in the usage of Yammer by looking at the number of postings in Figure 1 which show the postings from the first posting on September 21, 2016 through the postings on September 22, 2017. These 361 postings were made by 108 different individuals. While we will only discuss initial reply numbers in this paper, it may be of interest to know that as of the last date of examination 139 different staff members had used Yammer to make or reply to a posting.



**Figure 1 : Number of Unique Posts in Yammer by Month**

Initially only the testing team had access to the SAS Grid. Also, they still had access to Slack. This may have limited initial usage. Staff were transitioned to the GRID from early October 2016 through early December 2016. Postings reached a peak in December, despite being a shortened holiday month, and January. While one might assume postings would correspond more directly with when staff were transitioned, access to PC SAS was maintained through the end of the calendar year. Many staff, although migrated to the SAS Grid in October and November, chose to continue to work with PC SAS until closer to the end date.

As these are nearly always communications with no specific respondent in mind, it is of interest to see how many of these postings generated a response. This is what is shown in Table 1.

|                        | POSTS | RESPONSES | RESPONSE<br>PERCENTAGE |
|------------------------|-------|-----------|------------------------|
| <b>ALL POSTS</b>       | 361   | 272       | 75.4%                  |
| <b>SAS ISSUE POSTS</b> | 188   | 181       | 96.3%                  |

**Table 1. Percentage of Yammer Posts that Received a Response**

As we can see the response percentages were very high. For all posts, over 75% garnered some response. This includes posts that may have only been sharing information rather than posing a question or concern. For those that were determined to be addressing an issue with SAS or the SAS Grid we had over a 96% response rate.

These appear to be positive results; however, it was necessary to distinguish a helpful response from any response. We read through the 361 postings and replies to determine for which ones was a resolution reached. By "resolution" we do not mean that a solution was found, only that information was conveyed to the staff that would allow them to resolve their situation. This can include information saying that there is no solution, or directions on how to find the solution outside of Yammer. The efficacy of specific solutions will obviously vary with the abilities of those replying. The resolution percentage is shown in Table 2.

|                        | POSTS | RESOLUTIONS | RESOLUTION<br>PERCENTAGE |
|------------------------|-------|-------------|--------------------------|
| <b>SAS ISSUE POSTS</b> | 188   | 158         | 84.0%                    |

**Table 2. Percentage of Yammer Posts Dealing with SAS Issues that Reached Resolution**

Again, we see what we'd like to see, issues being resolved, happening at a high rate. 84% of all posts determined to be addressing an issue with SAS or the SAS Grid had a response to them that led to some sort of resolution.

Information dissemination is important but it is as only useful as the speed at which it is conveyed. Resolutions given out weeks after the issues arise may not actually be helpful at all. It is also important then to measure the speed at which the responses were made. It is here, in Table 3, where we find another set of positive findings.

| <b>RESPONSE TIME TO SAS ISSUES (IN MINUTES)</b> |     |
|-------------------------------------------------|-----|
| Average Response Time                           | 134 |
| 90th Percentile                                 | 299 |
| 75th Percentile                                 | 101 |
| Median                                          | 34  |
| 25th Percentile                                 | 10  |
| 10th Percentile                                 | 3   |

**Table 3. Time to First Response (in min) to Yammer Posts Dealing with SAS Issues**

The median first response time was just over half an hour. At least twenty-five percent of all posts presenting an issue with SAS received a response within 10 minutes and at least one in ten were responded to in three minutes or less. Moving in the other direction, taking the average work day to be 8 hours or 480 minutes, over ninety percent of all posts garnered a response within one working day.

These numbers do feature times adjusted so that there is no penalty for response outside regular working hours. (See Appendix for further clarification) There are a limited number of responses adjusted in a way such that the time of posting and time of response are identical. To test the impact of these examples, we removed those particular postings from the analysis. We found little change from the values above. The median moved to 35 minutes and the average to 136 minutes. The lower percentiles did not change while the upper ones adjusted to 102 for the 75<sup>th</sup> percentile and 309 minutes for the 95<sup>th</sup>.

## DISCUSSION

We believe that the use of an enterprise social network helped RTI manage a difficult transition better than it could have otherwise. According to the numbers we had nearly 200 postings on SAS related issues, the bulk of them from the beginning of transition to a few months out. Out of these postings, a very high percentage received responses and a high percentage were deemed to receive some sort of resolution. Not only that, the responses were made in in a very timely fashion. These are all what one would like to see from their communications.

An unanswerable question is whether the use of an enterprise social network was more or less successful than simply relying on email and the other forms of communication available to staff. While I can note an extremely small number of emails sent to the internal SAS Users email group, it is not a fair comparison because staff were prompted to use Yammer to discuss the SAS Grid. It is also not a fair comparison to look to previous months of email group usage for comparison as the transition to the SAS Grid would provoke more conversation and interest than your standard time period.

What we can do is compare the Yammer group against itself during a time frame where less questions are likely to be asked. As we can see in Table 1 the number of posts diminished a few months after the roll-out. It has seemed to reach a relatively consistent level of roughly 20 a month. This would indicate that this is a base-level for posting about SAS and SAS Grid issues among RTI staff. Therefore, the increased usage numbers during the transition months show that staff did interact during the transition time frame more than they would during a normal time frame.

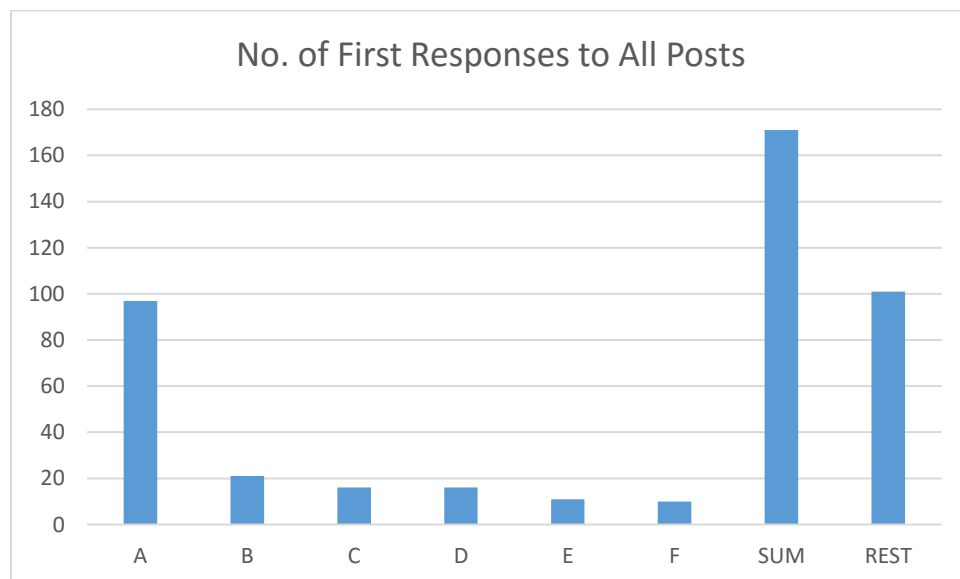
While it is possible that twenty posts do not constitute a base number, it stands to reason that it is. There has been no return to usage of the SAS User email group and one can easily explain the drop in posts from the SAS Grid time frame. The most likely explanation is that staff have become more comfortable with SAS Grid over time and have fewer questions and updates to post. However new staff are being

onboarded all the time. One can also assume that the staff have similar questions to those encountered by past staff, given the general experience level of the new staff. It would be reasonable to expect slight adjustments up and down in the number of postings based on the number of staff onboarded each month. However, we do not see that. We can conclude that either the information has (1) now been disseminated through all staff meaning the questions can be resolved outside of the enterprise social network, or (2) the answers are now searchable within Yammer meaning new postings are unnecessary. Ironically, the success of a communication method can ultimately lead to less usage for strictly communication.

## POTENTIAL ISSUES

We noted the strengths of enterprise social networking solutions earlier. We must also discuss potential problems. Part of our success with an enterprise social network may be attributed to novelty. The SAS Grid transition happened early in our move to Yammer and thus was able to take advantage of that initial level of interest. It also, in a way, became associated with Yammer. In other words, it was known to staff that SAS Grid transition issues would be discussed on this platform. At the same time, little else was being discussed in Yammer groups. As the platform becomes more universal, there becomes more opportunity for things to get lost among other communications and develop the same issues as intracompany email.

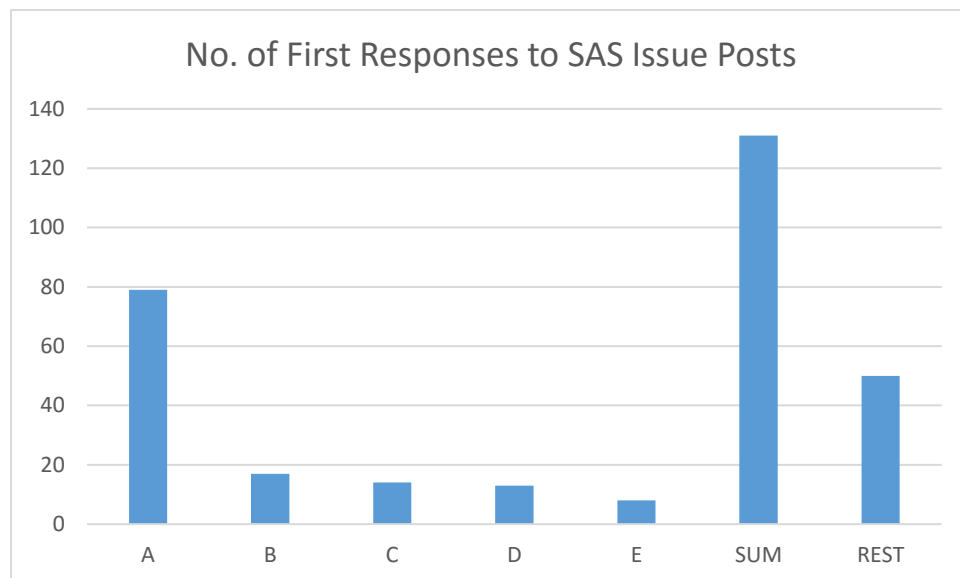
Another issue with an enterprise social network working properly for issue resolution is that it calls for a constant stream of steady users to be effective. You are only going to be as successful as the quality of the staff that wishes to participate and how often they do. In our case, as seen in Figure 2 below, a small number of staff, particularly one, dominate response. While 60 different staff had at least one first response to postings, over 35% of all first responses came from the same individual staff member and the top six individuals accounted for over 60% of all first responses.



**Figure 2. Number of First Responses by Specific Individual Staff and Other Groupings over All Posts**

This difference is even starker when we look at responses designated as dealing with SAS related issues in Figure 3. The single staff member is now responsible for over 43% of all first responses and the top five individuals account for over 70% of all responses. Also, this calculation assumes that all the first responses are helpful responses. It is more likely that initial responses from one-offs (which account for over 13% of first responses in this subset) are not offering help but some other type of response. Assuming some dismissal of these responses would push the percentage of response from the small number of heavy responders closer to 4 out of every 5 posts about SAS issues. We can assume perhaps that if that first staff member did not respond as frequently that one of these other staff members may

have responded more. However, it is unlikely that all those responses would happen with such frequency and if more than one of these staff members no longer responded it is likely our response rates and times would suffer.



**Figure 3. Number of First Responses by Specific Individual Staff and Other Groupings over Posts Dealing with SAS Issues**

Another issue is the placement of questions. It is seen that staff may present related questions, not in a new post but in the comments of a related post. These types of in-comment responses may be more prone to be ignored in comparison to issues that begin their own chain of communication.

## CONCLUSIONS AND RECOMMENDATIONS

We feel that the use of an enterprise social network was the last piece in an extensive communication plan which allowed staff to address specific issues on a peer-to-peer level with confidence that the issue would be resolved quickly. The above results back these feelings.

We do not believe an enterprise social network alone would be sufficient in a migration to SAS Grid. It would quickly become overwhelmed by simple questions that would be better addressed through broad methods of communications such as trainings, or could be easily discovered in a FAQ type page. The burden on the staff to reply to such questions and the sheer number of posts would make it difficult to maintain a strong user base and a strong set of responders. However, we do believe that it is a necessary piece as staff are likely to encounter similar issues as they move forward in the new environment. These issues may not be frequent enough to justify a topic in a FAQ page, someone simply may not wish to create a page with the information, or it may be included as part of a larger topic and difficult to find in a search of the FAQ. By presenting it as a question to all staff facing a similar situation you can directly interact with someone that may have a solution or someone also looking for one. And once the solution is reached it remains available for staff to find via simple search.

While we believe email groups could be used in a similar fashion, the simple fact that an enterprise social network was designed for such communications makes email groups an inferior solution. They often require more work from staff to maintain and interact, and even in something as simple as design lack appeal. We want users to want to use the method of communication so issues are resolved in a timely fashion. Anything we can do to prompt such usage is important.

We would recommend, however, a strong review of the staff that would be involved in using the enterprise social network. Are there staff that would naturally gravitate to providing the quick responses you need? If not, it may be necessary to assign staff to be contact people, or rotate through staff in some

manner. It is important that feedback is relevant and expedient. If it is, the user will return to the software and the network itself will improve.

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## APPENDIX

To account for questions asked at off hours all time and date have been adjusted to fit into work hours. During the work week, posts made prior to working hours were adjusted to the RTI start of the day, officially 8:15 AM, and posts made after working hours, officially 5:00 PM, were adjusted to the start of the day for the next working day. Posts made after the close of business on Friday, or on either Saturday or Sunday, were adjusted to the start of the day on the following Monday. Time to response was measured as the number of minutes during the working days it took for a response to be made.

There has been no adjustment made for holidays. Therefore, the time of response may be overestimated by the results above. However, it is unlikely that the median results and non-extreme distributions would be significantly impacted by making a holiday adjustment.