

Leveraging Resources to Maximize SAS® and JMP® Support

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Abstract

Individuals serving as the SAS representative, SAS consultant, or SAS training coordinator for a client organization have to deal with a variety of tasks, including licensing, installation and upgrading of software, resolution of technical problems, training issues, and dissemination of appropriate information to various individuals and groups. To provide better support to the 2500+ users of the SAS system and/or JMP software within our organization, we found and leveraged various resources to help us accomplish these tasks. This paper provides an overview of both the in-house and external resources that we use. Resources and processes which appear to be "keys" to successful support are highlighted.

Introduction

The first two authors were hired into their current positions as SAS consultant and SAS representative, respectively, during late 1994 and early 1995. Their predecessor (who handled both roles) took early retirement more than a year earlier. Management, at the time the predecessor retired, spread the SAS consultant and SAS representative responsibilities across several individuals in various groups; however, none of the individuals handled SAS tasks as their primary role. This situation led to a great deal of confusion and frustration, since version upgrades were not carried out in a timely manner, technical problems went unresolved for extended periods, and there was a lack of coherent communication.

Once these problems surfaced, management quickly realized it was imperative that most of these tasks and activities be "rebundled," with responsibility and authority vested in only one or two individuals, and if in two, then the two should be co-located as a team. Based on interviews with the previous SAS consultant/representative and the various individuals handling the diverse tasks, SAS and JMP licensing issues were deemed significant enough to justify a second person whose primary responsibility is administration of license agreements with SAS Institute. This freed up the consultant's time to focus on technical support issues, and to coordinate SAS and JMP activities.

After a mid-1995 staff reorganization, the SAS representative and the SAS consultant were placed in

the global common applications group of the company's Information Technology division. Given the widespread use of SAS and JMP software across global affiliates, this was a logical placement. It also provided a good base to pursue the development of more appropriate licensing agreements for both the SAS system and the JMP software product.

Administration and License Issues

SAS licensing is somewhat different from that of many other vendors due to the annual renewal fee structure. It is critical to keep track of actual users on platforms that are licensed on a per-user basis. Many unused licensed seats can mean the organization has an unnecessarily high per-seat cost; while unlicensed users puts an organization at legal risk.

In a large organization such as ours, someone must chargeback departments within the company for their proportion of annual licensing costs. The SAS representative handles this responsibility.

Creation of a Standard Service Offering (SSO) document establishes formal, centralized support obligations and sets direction for future support of the SAS Institute products. This document gives an overview of the software, the names of the support team members, a description of the standard and extended services, and the response time that a customer may expect. The SSO is made available to customers via the LAN, the intranet home page, and hard copies are available upon request.

SAS and JMP software was used by many affiliates outside US/Canada (and at higher per unit cost); significant cost savings were realized by negotiating a broader and more appropriate license agreement for JMP and SAS desktop software.

Constant re-evaluation of licensed platforms and modules is needed. Every year we adjust (add or delete) SAS modules on one or more platforms resulting in a) cost savings from the elimination of "dead" or little-used components, and b) enhanced productivity through the use of new SAS products.

It is important to stay aware of users' software needs – some users have internal budget "price points" which make software attractive or not attractive for specific projects; being aware of these points will

allow the negotiation of software agreements that provide access to the software for a wider user base.

We view SAS Institute as a partner and work toward developing win-win agreements between our organization and SAS Institute. We have found our JMP account representative and our SAS system account representative open to suggestions for improving processes and agreements between our company and SAS Institute.

Software Installation and Upgrades

For desktop software, secure LAN locations are established for the install media, with users having access by permission. Users receive (by email) the install instructions so that they can install directly to their own desktop systems from the LAN. If necessary, one of us will go directly to the user's desk to assist with the install. We are examining the possible use of Microsoft Backoffice (SMS) as a means of carrying out routine installs, version upgrades, and application of annual setinit's, since this technology should make these operations transparent to users.

Install media is placed on secure local servers at remote sites to decrease network traffic and expedite installs at those sites; READ ONLY access is granted to users by the SAS representative or consultant in conjunction with network security managers. UPDATE access to the install files directories is only available to SAS representative and consultant.

When necessary, diskettes or a CD are provided for home or non-network installs, and these diskettes and CD are under close control of the SAS representative and consultant. Users must sign a special form before receiving temporary possession of the install media.

Step-by-step new install or upgrading procedures are distributed to users via email by the SAS representative or consultant, along with licensing compliance information.

License renewal information (e.g. setinit's) are distributed by email to registered users along with instructions to apply the setinit's.

It is crucial to develop and maintain good working relationships with systems staff on mainframe and midrange server platforms – we work closely with them to get installs online as soon as possible after receiving media; and we frequently make use of their operating systems knowledge when resolving

system-specific SAS problems. It would be very difficult for one person to be an expert regarding every platform running SAS in our company, thus accessing the knowledge of others regarding system dependencies is a critical leverage point.

Technical Support

In-house technical support is available to all end users. Overcoming installation problems, debugging or resolving errors in SAS code, answering "how-to" questions, researching technical documentation, and SAS system "performance tuning" are examples of some of the technical support provided.

One important function is to serve as a liaison between end users and SAS Institute tech support. When a problem cannot be resolved in-house within a few hours, or we know that the particular problem is beyond our level of technical knowledge and/or available information, we will get a SAS Institute tech support person on the phone. Often we will make the call to SAS tech support, then conference in the actual user for direct interaction between the user and the SAS tech support staff. By listening in, we can provide additional systems-specific information and can learn the answer to the problem along with the user.

Online access to technical information is provided in one place that is accessible to all our users -- our "SAS and JMP Users Homepage" on the company's intranet (see "Empowering SAS Users with a Webpage on Your Intranet" in either the 1997 SUGI 22 Proceedings or the 1997 Midwest SUG Proceedings).

In our offices is a full set of SAS manuals, more than 20 different issues of the SUGI Proceedings, and most issues of *SAS Communications*, and *Observations*. We also have the master indexes that are available for these publications. The most recent year of the SUGI proceedings is always available online to users via a CD-ROM drive on the network and a link within the SAS and JMP Users webpage on our intranet. SAS Institute is rapidly expanding access to their various publications and technical reports by making these materials available online through their website, and we maintain an active link between our intranet webpage and the SAS Institute website so that users can rapidly access this information. The current version of SAS on the Windows platforms has an icon on the toolbar which opens up the user's browser and links directly to the SAS Institute website; we find it is helpful to our users to modify the properties of this icon so that it links to our in-house webpage instead of linking

directly to SAS Institute's website. Once on our webpage, there are many links to information at the SAS Institute website.

An in-house FAQ and common problems list is maintained on our webpage. A rule of thumb that we follow is to place the question and answer (or the problem and resolution) on these lists if question or problem occurs more than twice. Occasionally the first instance of a question or a problem will wind up on the webpage if the business impact of a second occurrence would be significant.

Questions and problems are always rapidly "bumped up" to SAS Institute if answers or resolutions cannot be generated in-house; typically our "bump-up" point is after one business day spent on the question or problem.

An advanced trouble-ticket system is used to track and monitor problems that come to us through the company's computing support center switchboard. Both the SAS administrator and the SAS consultant receive notification of trouble tickets by pager and email. When both of us are at work, we accept tickets according to our particular scope of responsibilities. When one of us is out of the office, the remaining person accepts all tickets and decides how to handle them. The trouble-ticket system is valuable in that initial information about the problem is recorded at the first point of contact and frequently allows us to get a "running start" on the problem even before calling the user, and often it is possible to have a resolution in hand by the time the user is contacted directly.

Technical update sessions about software upgrades and/or new products are actively promoted to our end users. Whenever possible we try to bring SAS or JMP development staff from SAS Institute onsite to share their knowledge.

Participation of users in beta testing of new SAS or JMP products is actively encouraged. In several cases over the past three years this led to the inclusion or improvement of specific features in the eventual production version of SAS Institute software.

Training

In early 1997 nearly all SAS and JMP training at our headquarters was moved to an off-site SAS public training location in the area. Our SAS training coordinator helped match up SAS Institute with a high-quality local training facility which was already our preferred training site for other software products used by our company. Significant savings (well into

the tens of thousands of dollars) were realized from this move. It also increased the variety of courses available to our users.

We found it important to research users' training needs and to communicate these to the company training department and to SAS Institute, and then assist as necessary to get needed courses on the schedule of the nearby training facility. Anytime there is licensing growth (e.g., an extra hundred JMP licenses are requested from SAS Institute), it is a good idea to concurrently make sure there are additional training classes added to the local public training schedule to accommodate the new users. At this writing, SAS Institute does not seem to automatically communicate licensing upgrades to their training group, which would allow the training group to 1) place appropriate courses on the schedule of the nearest training center, and 2) communicate the availability of these courses to the newly-licensed users. This linkage is one area that we have recommended they consider improving.

During 1997, we worked in collaboration with our company training department and a third-party vendor to place SAS training courses on our company's "Virtual Learning Center" website. This makes web-based tutorials available to users worldwide through our intranet. An advantage is that users do not have to install the SAS software, or have access to SAS software on servers, before completing these web-based tutorials.

In addition to the courses available through the website, we make available the SAS System computer-based tutorials (CBT's) on nearly all the SAS platforms at our company.

We purchase 90-day discount training blocks from SAS Institute (which SAS Institute calls the "Enterprise Public Training Offer," or EPTO) on an as-needed basis. Use of the EPTO discount dramatically cuts our per-person/day training cost by as much as 40 to 50%. In 1997, our company saved an average of \$125/day for each day of SAS and JMP training by using these discounts, compared to the standard SAS Institute course prices.

Prior to 1997, most of the SAS and JMP training at our headquarters location was provided by third-party vendors on-site (instead of at the off-site public training site we now use). Our per-person costs under the old system (using third-party vendors on-site) were even higher than the standard SAS Institute public class per-person cost, since we frequently paid for classes that were not full. This often pushed our per-person training cost above that of the standard SAS Institute public course per-

person cost. Thus, real savings from the new training process actually exceed the \$125/day figure.

The changes made during late 1996 and early 1997 are continuing to pay off. During the first half of 1998, total person/days of SAS and JMP training for our company already exceeded the total for all of 1997. A major benefit is that staff at our affiliates and our non-headquarters locations in the US have been able to take advantage of the discount at public SAS Institute training sites near them, instead of having to travel to Indianapolis for training courses.

Another benefit of paying close attention to the needs of users in the company, and translating these into training via arrangements with SAS Institute, is that our company's training staff have strengthened their relationship with SAS Institute. Concurrent with the development of a stronger relationship was an increase in respect for SAS Institute as a training vendor. Our technical training staff now considers SAS Institute its best "training partner." Our staff found that as they worked with SAS Institute staff to develop new training opportunities that the SAS Institute staff was very responsive and open to suggestions for improvements in processes. A number of suggestions made to the SAS Institute training division were adopted, and have proven mutually beneficial.

In order to gain the benefits of discount programs and improved training processes, it is critical to make sure users are aware of training opportunities. We do this primarily through our webpages on the intranet and also by email. Since users typically register for SAS public classes through our company training services department, we have helped the staff of the training services department learn how to make sure Lilly staff get the appropriate discounts.

Information Dissemination

Users and non-users alike are encouraged to attend on-site and off-site demos by SAS Institute staff and to attend SAS users group meetings.

Email is used extensively as a means to convey information to users. Our email system now allows dynamic links to webpages, and the use of attachments, which are powerful tools to speed user access to information. The system allows direct attachment of SAS programs, logs, and output to email messages, which makes it easy to troubleshoot code that is causing problems for users.

The "SAS and JMP Users Homepage" on our intranet is invaluable. It is a terrific tool where we can place

both our company-specific information and also have links to quite a variety of external resources.

Our organization has a discount for SAS publications, and we have a system in place that allows users to make sure they get the company discount for SAS publications when they need to place an order.

Notice of international, regional, and local user group meetings is given to our users.

At times, training rooms are used for no-charge hands on SAS or JMP workshops during periods when companywide fee-based training tends to slow down (typically near the end of the calendar year).

Several SAS and JMP "Update" days have been held at our site – typically these are held twice each year in one of the company's main conference and meeting room facilities. These "updates" are built around major new releases of the SAS or JMP software, or new products from SAS Institute that work with the software we already use.

We bring in the SAS account representative and SAS systems engineers from nearby SAS Institute offices for group demos when appropriate – they are always willing to showcase SAS software; ditto for the JMP account representative and JMP technical staff from SAS Institute headquarters.

Introduction of New Products

SAS Institute routinely rolls out new software products; examples from the past couple of years include SAS/Enterprise Miner, SAS/IntrNet, SAS/MDDB, and the SPDS product. Typically, SAS Institute allows a client to evaluate products for a limited time before making a purchase decision.

It is important to identify a user or users who are willing to evaluate the software against "real" data on in-house systems. Once a user (or group of users) is identified, the SAS consultant and SAS representative acts as a liaison between SAS Institute staff and the users to facilitate acquisition and installation of the evaluation software. Once the evaluation begins, the process is monitored until the evaluation is completed.

We find that it is important to understand and work with "technology architecture" efforts within the organization. Technology architecture frameworks within organizations are a means to focus budget dollars on a minimal number of information technology tools while maximizing functionality and support for users. The importance of SAS within an

organization for production work, and the broad capabilities of the SAS system, are not always well-understood by architecture staff. They may underestimate the importance of SAS tools within the organization's total computing environment, and when this is true, it is appropriate and necessary for the SAS consultant and/or SAS representative to become SAS advocates to the technology architecture staff.

Management

It is crucial that management understand and appreciate the role of SAS and JMP software as analytical and reporting tools within the enterprise. It is also important that management realize the tremendous potential of the SAS system a) as an application development tool, b) a data warehousing tool, and c) as an integrated environment for solving a variety of business problems.

Our manager oversees a variety of software support teams. It is important that he understands, or can quickly find out, the advantages/disadvantages of using a SAS or JMP functionality versus a similar functionality in other software products.

Monthly updates are given to our manager regarding new SAS and JMP installs, current total numbers of users, number of technical support problems, some information (when relevant) regarding specific problems, status of licensing issues, a summary of interactions with purchasing and legal staff, and advance notice of any dollar-related issues.

Our experience with several managers over the past few years indicates that the following areas are of major importance:

- Quick response to technical problems and rapid resolution of these problems
- No surprises that affect budgets
- Decreasing per unit cost (for both software and training)
- Savings from eliminating unused software
- Company-wide (global) licensing agreements as opposed to geographic-specific agreements
- Rapid access to relevant software information
- Sharing of relevant technical know-how (in terms of managing and supporting software) with rest of the staff

SAS Institute

It is imperative that good relationships are developed with all "points of contact" at SAS Institute – including

the SAS account rep, the JMP account rep, SAS and JMP development staff (for both beta testing and the inclusion of features deemed necessary by users), and systems engineers at nearby SAS offices. The payoff for an organization can be significant.

For potential applications that have a license-increase potential, SAS Institute is always ready to participate in full-scale competitive evaluations, or to develop working prototypes for assessment by the application managers (however, don't expect all such situations to work out; some will die for lack of funding, objectives can change, and sometimes – gasp! -- end users or managers will decide that SAS is not their choice). The goal, in a commercial organization, is to place technology within the enterprise to generate the best return on investment for the company. Take heart from the fact that there are many situations where SAS (or JMP) IS the appropriate technology.

Some big gains are possible if in-house systems staff are encouraged to expand working relationships with technical experts at SAS Institute (one significant example in our company was the implementation of hiperspaces in MVS SAS; see "Getting Hiper about Hiperspaces" by Fred Forst in the SUGI 22 Proceedings). Failure to pay adequate attention to performance tuning issues can cause unneeded, significant expenditures for CPU upgrades, more memory, and additional storage capacity.

Building a Strong Base

New staff in any organization will find it takes time and effort to develop the people-to-people "linkages" to key areas of the organization. This time, however, is well spent. Frequently, one or two users in each area will become part of a core group of users organization-wide who can become extra "eyes and ears" for both potential problems and potential applications. These users can develop into strong advocates of SAS within their part of the organization, especially if they feel comfortable with support and services coming from the organization's in-house SAS representative and consultant and from SAS Institute.

Summary

Leveraging resources as described in this paper has allowed three individuals to not only support a large base of pre-existing SAS and JMP users within the organization, but to "grow" the base to much higher levels. In less than three years, our company's SAS and JMP support team has presided over a *fivefold*

increase of total licensed SAS and JMP users on desktop platforms (from less than 500 to over 2500) without any additional manpower. At the same time, restructuring of SAS licensing agreements significantly expanded the geographical scope of the support provided by the team.

Support "Keys"

Here is a quick list of support "keys" and the resources and processes that can be used in each case, listed in approximate order of importance based on our experience.

- Take care of current users first: resolve their problems and answer their questions; it makes no sense (and can be very difficult) to expand the user base if current users are frustrated with the software; provide multiple means to accomplish this – immediate access to in-house SAS support staff, information on webpages, access to documentation, access to systems staff, access to SAS Institute support.
- Actively seek ways to decrease unit costs (for software and training) while simultaneously expanding availability of software and training across the organization and platforms; get a handle on where and how SAS or JMP are currently used in the organization and then work with management, purchasing staff, and SAS Institute to reach these objectives of decreased unit cost and greater availability.
- Improve usage of current SAS and JMP tools -- help users understand/access features of these tools; schedule and host demonstrations, provide tips in an easy-to-access format.
- Understand customers' needs, product upgrades, and SAS Institute's new product offerings, and work to appropriately align products with needs; arrange for beta testing of new products or for evaluation copies of current SAS products when warranted; and understand and work within the organization's technology architecture framework to minimize the company's toolset and expenditures for information technology.

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Authors' Note

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