INTRODUCTION

The trend in the last five or six years in Computing Centers and particularly in the area of user support services has been toward an emphasis on client satisfaction and end-user involvement. There is a move on the part of many of these organizations to establish Information Centers in order to better provide their customers (clients and users) with desired services.

Traditional supply driven relationships between Data Processing personnel and clients are giving way to demand driven ones. End-users are now more active and wish to exert effective control over their computing needs. Their primary interaction is no longer with programmers, but with IC staff acting as facilitators and problem solvers. Ongoing, positive communication between Information Center Staff and the client is a major objective of these new organizations.

IC philosophy is to promote end-user independence and self-reliance by involving them in all phases of the solutions to their computing problems. Toward this end, computer users are made to feel that they do, in fact, have influence over the way in which their computing needs are fulfilled.

Unfortunately, in a large organization such as The University of New Mexico, it is difficult to keep a finger on the pulse of the user community. As the user base grows we must constantly search for new ways to stay in tune with client needs. In Synnott and Grubers’ book, Information Resource Management, they prescribe the following strategies for the 80’s in respect to "care and feeding of users" to assure effective user relations:

1. Involve users in planning
2. Share the management of projects with clients
3. Influence user perception through appropriate marketing etc.
4. Utilize user services contracts when appropriate
5. Establish Customer Service Centers
6. Create user oriented charge-out systems
7. Regularly conduct user satisfaction surveys

The Environment. At the Information Resource Center here at UNM we are implementing a number of similar strategies. One of the most effective and useful is our institution of a yearly Statistical Software Users Survey. (A survey is a research tool used for describing attitudes and behaviors of groups of people or social units. Questions which have been carefully designed and organized by methodologists typically are presented to respondents in the form of questionnaires.)

The University of New Mexico has approximately 25,000 students and 9000 full and part-time faculty and staff. Currently, we have an IBM 3081K running MVS® and numerous Vaxes running either VMS® or UNIX®. New computers are constantly being added to our already large network. The IRC supports upwards of 13,000 active computer accounts on these systems with more being added all the time. In addition to the mainframes and minis, we have approximately 2500 PCs on campus for which we also provide support.

BACKGROUND

Year after year, SAS® software is continuously the most used software product on the IBM mainframe. However, although we were able to determine total number of executions of the SAS procedure, in the past, there has been no mechanism in place for monitoring which users from what departments were using which products or procedures and for what purpose. We did know that with only two SAS software consultants, it was becoming increasingly difficult each year to be certain we were responding adequately to the needs of the ever-growing SAS software user community. Also, as the number of SAS software users and the number of products offered by SAS Institute increased over the last several years, we became concerned that we were basing (1) our decisions to buy certain products, (2) our SAS training classes and (3) our SAS software consulting support plans on the handful of SAS system users we see at the IRC regularly, i.e. the 'SAS squeakey wheels'. We knew from the usage statistics that there were lots of SAS software users out there busily computing, but we felt we were uninformed about how they used the SAS system or if their computing needs were being adequately met.

Strategy. We knew it would be very helpful to us in our planning, consulting and training roles to know our users better. Additionally, with budget cutbacks, management was requiring more substantive justification for requests to purchase
new SAS software products and retain old ones than simply "our users need ETS". They wanted to know who needed it, how many needed it, was it needed for instructional, administrative or research purposes, etc. Therefore, we realized that it had become imperative for us to develop an ongoing strategy for monitoring user satisfaction, assessing needs, maintaining user profiles and obtaining user input about level of service, training, new products, little-used products, to name a few. As a major strategy in our overall plan, we decided on a formal, annual 'Statistical Software Users Survey' to address these issues.

Of course, this was not a new idea to us, after all, every year we dutifully, if not enthusiastically, fill out a survey of 6 pages or more for SAS Institute, hoping to influence SAS software Consultants at our site have agreed that the survey would be authorized by CIRT and that it would be developed, conducted and analyzed by the Information Resource Center on a yearly basis.

THE INSTRUMENT

Construction. Some of the literature on user surveys suggests having outside consulting firms construct and administer such tools (Synott and Gruber, 1981). However, since both of the IRC SAS software Consultants at our site have graduate degrees with concentrations in Social Research Methodology and years of practical experience in survey design and analysis, we felt confident to develop the tool and conduct the campus-wide survey in-house. If this kind of expertise does not exist in an organization, it is wise to obtain outside assistance. Development of the survey instrument is not a trivial task. Careful planning of the questionnaire at the beginning can elicit a better response rate, and facilitate easier coding procedures, data entry and statistical analyses at the end. Information or (data) is only as good as the instrument used to collect it.

Planning is necessary in respect to numbers of questions asked, format and style of questions used, size of the population to be sampled and overall professionalism in respect to print and question organization, as well as content. A sometimes difficult but necessary task is keeping the instrument as short as possible but also making sure that it is comprehensive. Eliminate questions that appear to be redundant. Another important issue is making sure the questions asked truly measure what they were intended to measure, (validity). One way to deal with this problem is to make sure the designer of the questions knows the subject area very well and therefore can anticipate the types of responses and reactions one can expect from respondents to the various questions. Another way to assure validity and reliability of questions and the entire instrument is to pretest it. Often when researchers do this they are able to catch inaccuracies and unclear portions of the survey and can revise and incorporate changes before the instrument is administered to the general population.

If gathering information for statistical analysis, a majority of closed-ended or forced choice style questions will probably be best. Make sure however that the categories or answer choices are comprehensive and mutually exclusive. For example:

How would you describe your SAS skills?
1.) Beginner 4.) Expert
2.) Intermediate 5.) Other
3.) Advanced

However, some questions may be of an exploratory nature so that restricting answers would not be profitable. For these, open-ended questions will be more appropriate. For example:

What features do you like best about SAS?

Another type of question which can be very useful, especially where space is a problem, is the matrix type of question, wherein a few questions with a fixed set of answers are grouped together. For example:
If you have problems with SAS where do you turn for support?

<table>
<thead>
<tr>
<th></th>
<th>Sr. Consultant</th>
<th>Consultant</th>
<th>Colleagues</th>
<th>Documentation</th>
<th>Other</th>
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<tr>
<td>4</td>
<td>Always</td>
<td>3</td>
<td>Some</td>
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<td>1</td>
<td>Never</td>
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Some- Always Often times Never

1. ) Sr. Consultant
2.) Student Consultant
3.) Colleagues
4.) Documentation
5.) Other ______ _

Still another style of question which can also be very useful, but confusing to users if not presented clearly, is the contingency question. For example:

1. Did you take any IRC courses when learning SAS?
   1.) Yes  2.) No (skip to question 2)

1A. Were the classes helpful?
   1.) Very  2.) Not Very
   3.) Somewhat  4.) Not at all

2. On which system do you most frequently use SAS?
   1.) IBM-3081,MUSI C
   2.) IBM-3081,TSO
   3.) VAX 8650,VMS

If there are groups of questions in the instrument that will not pertain to some users make sure you expedite respondents being able to work through only questions relevant to them. For example:

"If you DO NOT use SAS on the IBM Mainframe skip to Section IV."

Finally, where possible, group like questions together in the questionnaire to maintain respondent interest, for expedience in working through the survey and for error checking purposes later on. Surveys should always be accompanied by a cover letter or some type of appropriate introduction which clearly states the purpose of the survey and, if any, benefits to the respondent for participating.

It is also important to give some thought to how to show your appreciation to the participants. Often a good place to do this is in the closing paragraph of the questionnaire itself. You might thank the respondents and tell them how they may obtain results of the survey at the end of the questionnaire. For example,

"Thank you for participating. We appreciate your help. For results of this survey contact the IRC after July 31 or watch for the CIRT Back to School Newsletter in August."

This may also be the appropriate place to give or reinforce instructions for returning the questionnaires to the analysts. For example,

"Please return your completed questionnaire to Sandy Robinson or Dusty Teaf at the Information Resource Center, 2701 Campus, UNM by June 1st. We value your input so please don't forget to return it."

**DISTRIBUTION**

When faced with the decision of how to distribute the survey, more problems come to mind than methods. Since we in UNM's IRC are always constrained by budgetary problems and since the population to whom we wanted to distribute the survey is large, we needed to find an inexpensive but comprehensive way to canvas the whole user community. Finally, the method which seemed to have the most advantages for us and reach the most people, was to include it as the centerfold in the next issue of the CIRT Newsletter, which is widely read and distributed on campus. In addition, we kept copies at the Help Desk for distribution and asked clients to take copies back to their various departments, hoping to also reach clients that might miss that particular issue of the newsletter. Still, we have been quite concerned that we were not able to reach the majority of the graduate student population, and we know that they are an important SAS software user base.

A final step which most texts on surveys and polls do not include is one of dissemination of information gained from the survey back to the user. However, as SAS Institute knows well, it is very important, to insure continued success of a yearly survey, to provide timely, useful feedback about the results of the questionnaire to the client. This is what we call keeping your end of the bargain. We again chose to distribute results through the newsletter and through the IRC Help Desk. However, since on our survey we request that users include a name and address if they wished to have results mailed to them and/or be added to the SAS Users Mailing list, we are also obligated to forward summaries of results to all participants who provided us with this information. Using the survey to provide ourselves with an ongoing updated mailing list further enhances our ability to provide good and timely service to our SAS software users in the form of tips about new products, how to use old ones, changes being made to the system or about bugs that SAS Institute makes us aware of from time to time.

**ANALYSIS**

Most user satisfaction surveys do not require sophisticated, complex data analysis techniques to provide worthwhile information. However, most of us would appreciate having an easy to use computer program or analysis package to assist us in entering the data and producing answers. Without such tools people often get to
In 1987 we asked several questions which we intended to use to make important decisions concerning SAS software clients. We were planning to change operating systems on the IBM 3081 and we wanted to make sure that our SAS software clients would be able continue to work effectively on those operating systems being proposed, and if not, if they could work on another system already available at UNM, like VMS. In order to make this type of decision we needed to know more about how our SAS software clients were using the SAS system, the size of their datasets and quantity of printed output, the amount of tape I/O, and so on.

What we found was that 63% of our SAS clients routinely use SAS datasets with over 5,000 observations; 53% routinely produce large reports or generate output over 100 pages; and 66% routinely use tapes when computing with the SAS system. We, therefore, had strong justification in lobbying for a replacement system. We were also interested in knowing how these users that we had hoped for. In the future, we intend to remedy this by expanding our distribution strategy to include not only our own Newsletter, but also perhaps, the Campus Newspaper and dropoffs at individual departments. In doing this we hope to get more student responses.

We have on occasion received unuseable responses in the form of aggregated surveys for whole departments. A departmental programmer or administrative assistant has taken it upon his or herself or been instructed by faculty who perceive themselves as "too busy", to synthesize or average what they suppose would be the responses of 50 or more departmental users, including graduate students. We are looking for better, more inventive, ways to solicit individual responses from these "too busy" SAS software clients.

As a result of write-in responses we have to continually revise phraseology of questions and response choices to be more comprehensive to insure we are getting an accurate picture of user needs. This year we realized, too late, that we had a serious problem with the question about how clients who took classes from the IRC rated these classes. Training format and styles changed dramatically three times in the last 10 years but we failed to ask when they took the training. Another problem area we noted was that some users of other statistical packages fill out the Statistical Software Users Survey and say they would use the SAS system if it had certain statistical, manipulative, or organizational capabilities or if it were cheaper etc. We need to add a specific section for tapping the input from these clients as well.
CONCLUSIONS

Thus far, our clients have responded very favorably to our statistical survey. Most responses have been helpful, positive and informative. Negative feedback has also been constructive and helpful. Many respondents have even attached comments saying how much they appreciate being able to speak out or sound off about particular issues. Some have included suggestions about what we might include in future surveys.

We believe that the survey method helps us dispel many myths we have had about our SAS software users and they about us. We are also able to provide a spectrum of SAS system user profiles when queried. Rather than taking a wild guess when asked a question pertaining to our SAS software user community, we have actual data about which to speak. Finding the answers are becoming easier on both sides through this type of ongoing communication channel.

As members of the IRC, we are finding it much easier to deal with management on budget matters concerning statistical products and other support issues, since we have developed concrete justification for managing our resources. We intend to keep this door of communication open wide. We also intend to continually improve our methodology and to increase our client database, thereby increasing our knowledge about our SAS software and how and why they use the SAS system. We believe our commitment in this regard, to our SAS software client community, is constantly demonstrated by our ongoing search for ways to provide them with the products they need and want in order to best accomplish their day-to-day tasks as well as with quality support services.

REFERENCES

John Wiley and Sons, New York: NY.


FOR MORE INFORMATION

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