

From The Mainframe To The Sun To The World!

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July 7, 2003

Abstract

The goal was to automate the way we generate and report our daily student registration activity, while still utilizing the mainframe data and programs along with the UNIX and PC environment. This session talks about the steps we took to accomplish this goal. That is, to install and utilize SAS/IntrNet in order to automatically generate and post web HTML reports from the mainframe.

The SAS/IntrNet project was implemented through the Higher Education Computer Network. The principle users of the SAS products are located at the University of North Dakota (UND) and North Dakota State University (NDSU). At the campuses we currently use an IBM mainframe (OS390) system, so steps involved the coordination of activities from the mainframe to the (Sun) server. This session talks about the project that was recently implemented, the timeframe, who was involved, some of the costs, and the advantages of utilizing SAS consultants. We will also talk about "life after the consultants have left." A presentation of our final "product" will be demonstrated. We'll wrap up with some pros and cons of selecting this type of implementation.

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SAS/IntrNet Project Overview

1. Developed out of the need to “automate” SAS output
 - a. We were producing registration numbers by running programs (daily) on the mainframe
 - i. ftp...
 - ii. convert to html
 - iii. place on web
2. Worked with our ITSS SAS user consultant along with another institution (this is the “we” throughout this document)
 - a. wrote the proposal for institution to consider purchasing/installing the necessary SAS products in order to produce more efficient reporting
 - b. Received tentative quote from SAS
3. Once approved to “move forward” in the proposal, received a more specific list of product needs and costs from SAS (educational prices)
 - a. We told SAS what we wanted to be able to do.. they told us, given our current licenses, what additional pieces we needed to install
 - b. We were under a timeframe of “freeze all activity as of July 1” due to new soon-to-be-installed software (PeopleSoft). (decision moved a bit faster with this implementation coming upon us)
4. Upon final approval, timelines (aggressive) were set up for implementation
Note: We utilized the RISK MITIGATION – PILOT IMPLEMENTATION solution offered by SAS. It is a pilot program that offers a low-risk, minimal-cost opportunity for government and academic customers. The entire pilot project deliverables are supported by a money back guarantee.
 - a. installs to do prior to SAS consultants coming to campus
 - b. example programs to send to consultants (so they could begin writing the necessary code)
 - c. adabase information to document
 - d. hardware needs assessed
 - i. we found that we needed another server
 - e. software needs assessed
 - i. we were only at version 6.09 at the time.. needed to upgrade to version 8 (on the mainframe)
 1. The change from version 6.09 to version 8.2 was done very quickly (about two weeks of testing), but went very smoothly and when in production, very few users saw changes

- f. the end users needed to become familiar with PC-SAS AND version 8.2 without it yet being installed (as we knew in April that this was being proposed, spent much of the SUGI conference attending these sessions)

All of these assessments, installations, and other preparations took a **total team effort** on the part of our computer center personnel. A big time commitment and knowledge had to come to the table. From the mainframe experts to Unix to security to end-user consultants to (others?) to "us" end-users (as we knew the data and how we "wanted" the end product to work and look like). Fortunately, this wasn't over a long time span, just very intense for about one month; some technicians were involved longer than others. (example, in the past, we'd mainly dealt with the mainframe personnel, now the Unix people had to help with support, questions, questions, and more questions from us)

- 5. We (the computer center) could choose to install the products or have SAS consultants come in for 10 days (at two different weeks). The price of having the consultants was costly, but this is the option we went with. (and well worth the cost!)
 - a. The consultants (one expert mainframe person, and an expert UNIX person), equipped with our few examples that we had sent them prior to their campus "visit", came to campus and started on a Monday morning.
 - i. Conference first thing in the morning with consultants and all necessary computer center personnel, along with our group (of three) end users
 - 1. make sure everyone is on "same page"
 - 2. go through the examples to make sure we all understand what was expected of the final product
 - 3. make sure the necessary access/security is provided so the consultants can get into the systems as needed
 - ii. They used a small meeting room equipped with mainframe and internet connections in order to access and set up the necessary programs on the mainframe and on the server. They brought their own laptops.
 - iii. Ended each day with a brief overview/demo of what they accomplished that day.
 - b. By the end of week one, the products were working (but being so unfamiliar with all of the new applications, we didn't really begin to use at this time).
- 6. Training and learning-the-new-system
 - a. Six days of public training was also purchased
 - b. The same consultants came back after about one month and worked on the application some more (divided out the data for the two institutions) as well as provided some hands-on training
 - c. After the initial proposal, it was determined not to purchase one of the modules
 - d. Also, thankful for the consultants to deal with "small" items such as installing version 8.

- i. We had many previous versions of SAS saved in our archiving system (password problems.. but consultants steered us to the contact person as SAS Institute to solve this “yet un-reported problem”
 - ii. Had problems with SAS Formats – converting from version 6.09 to 8.02
7. Life after the consultants leave
 - a. Because of the scope of the project, and the level of learning that went along with this, three of us have been meeting regularly (it helps to have a few heads on this project!!). It took us a bit of time to “re-group” since the installation. It was all very complicated and new, but after about 6-months, we now have worked through all of the jobs, done our own detailed documentation, and ready to “share the data” with top administrators. (we are also on a first-name basis with one of the consultants!)
 - b. Even though we are now figuring it out ourselves, we feel even more thankful that we had the SAS consultants, on campus, to install and write the SAS code.
 - c. Along with the purchase price we were given training “credits.” That is, a total of 6 days of whatever public training we wanted to attend. (we’ve ended up taking a few web training courses)

SAS/IntrNet Project Demo

1. Brief Demonstration of the website (some handouts will be provided, i.e. with the TSO job, jobs on server, and what the site looks like)

SAS/IntrNet Project Wrap-up

Pros of this type of implementation

1. We had two very capable and qualified SAS consultants writing tons of SAS code, even before they came to campus, to implement the necessary applications and make our specific examples work.
2. The consultants worked with the technical personnel to install necessary products and addressed questions as needed at the time of installation. The most complicated aspect of the project was to get the mainframe and UNIX boxes (as well as support personnel) to talk to each other and utilize data and programs located on the two platforms. Without the consultants this would have been almost impossible to accomplish.
3. With the consultants on campus it required the attention of the “team” to act when called upon or drop everything and come to the table... It most likely would have been much more difficult if this was without their guidance, as then the timeframe can

get eased and folks may not be as likely to do some of the necessary and immediate "fixes."

4. Now that we have "the code" and everything is working well, it will be much easier to write other programs.

5. Have had excellent assistance from the SAS consultants for follow-up questions.

Cons of this type of implementation

1. We did receive a lot of documentation, but it's never enough. We would have liked more step-by-step directions (i.e. creating a new term, what do we do on the mainframe, what steps do we do on Unix). A flowchart of activities would have been helpful. Also a lot of jobs "leftover" from the testing and implementation. We still hesitate to do much cleaning/deleting of these jobs.
2. The training was very intense.. not enough handouts, and at times difficult to follow (without handouts) and document (that "D" word again)
3. Everyone involved needed to be "on call" for the two weeks that the consultants were on-campus. To utilize their time most effectively questions needed to be answered immediately and other implementation problems resolved quickly. (example of not going forward with one of the products) This directly impacted the "team" throughout the week. Even before the consultants arrived, UND personnel had quite a bit of work to do.

Both a pro/con was that a lot of time and "experience" had to come to the table; this project was a total team effort on the part of our computer center personnel. It was also determined that some exceptions had to be made. For example, exceptions made on the part of security. Normally someone out in Boston does not get security access to our mainframe, but this was granted. Also, with the necessary "rights" (read/write) access to the Unix, similar exceptions were made.

This was an expensive undertaking. Fortunately, we were at a time when a few extra funds were available. That funding came from several sources with the majority from the computer center. Also, the computer center personnel had a little extra time, with the new system coming in soon. These are factors that we will not likely see for some time and allowed us the opportunity for the implementation of this SAS project. Another factor was that SAS could be utilized with our new information system (PeopleSoft) that is currently being installed.