THE INFORMATION CENTER AT BBL MICROBIOLOGY SYSTEMS

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Introduction

The Information Center (IC) concept has become the most written about concept of data processing in recent years. However, there is insufficient data available to address the experiences of an on-going Information Center. Although the structure of an Information Center may vary from one installation to another, the basic concepts and procedures are the same. This paper will discuss the Information Center evolution at BBL Microbiology Systems and some reasons why SAS and its family of products were chosen as the foundation for the Information Center.

Background

BBL Microbiology Systems, a division of Becton Dickinson and Company, has been manufacturing products for the microbiology laboratory for over 45 years. The division consists of three strategic business units (SBUs), each manufacturing and marketing its own product lines. These units are located either in the Baltimore metropolitan area or in Cayey, Puerto Rico and employ some 1200 individuals.

The MIS Department services all the operating units with a professional staff of 27 individuals. The MIS hardware/software complement consists of an IBM 4341 Group 2 computer and the VM/CMS and OS/VS1 system control programs. OS/VS1 supports both the CICS and IMS/DB products.

IBM's Source Program Maintenance (SPM) is used by the MIS Department as well as the users of the Information Center as the programming editor. SPM allows the user to program, enter data, submit the job for execution, and subsequently view the results on-line, but all processing is done in a batch mode. The entire manufacturing and order-processing system is on-line/real-time so the BBL user community is accustomed to up-to-the-moment data. The terminal network dedicated to CICS consists of approximately 110 CRT's and 7 printers. Although this operation may seem small when compared to some SAS-using organizations, the needs of the MIS department and the user community are very similar.

What is an Information Center?

The Information Center at BBL is a place where a user can go to get help with a data processing problem, use the equipment available or meet with other IC users or the IC staff to get help with the design of a new application. As a concept, the Information Center is part of the MIS organization dedicated to assist the users in utilizing the computer to solve business problems.

Why an Information Center?

One of the universal problems of data processing departments is the programming backlog. Although there is no real way to estimate the programming backlog, all data processing managers admit there is one. By allowing users to access copies of system data, reports can be generated to meet specific needs quickly with minimal MIS involvement. When the MIS staff uses the Information Center facilities to help design systems, the number of changes during the implementation phase are minimized. The IC facilities are used to prototype new on-line applications and the report-generation part of a system is written and maintained by the user. The Information Center has reduced the known systems and programming department's backlog from 3.4 years down to 2.0 years and the invisible backlog from 5.6 years down to 1.0 year during its two year life.

A universal complaint of data processing departments is the time required to change an application. Since the user is writing and maintaining reports from existing system and/or designing and implementing his own system third-party interpretation is eliminated; therefore, the time involvement up front is reduced. Because the manager of the using department has control over his own programming resources, time can be allocated to meet the needs of the department without competition from other areas of the organization. Applications that could not be justified for the MIS staff can now be done using the department's internal personnel.

The Information Center has helped build an arena for trust and cooperation among the user community and the MIS Department. It has also helped different departments work closely together in developing solutions to common problems. Therefore, the MIS Department is not the only department working with all the units. Programs developed by the Quality Control Department of one SBU can be shared by Quality Control in other SBUs. The Information Center staff becomes the link between the different groups to ensure that program duplication is minimized.

Improved productivity is a natural result of the Information Center. MIS productivity improves since the programmers and analysts can concentrate mainly on large-scale, on-line and/or data base applications and not be concerned with report-generation. User productivity improves when reports can be modified or generated on demand and in the format that is most useful. BBL has found that many of the MIS-written reports are no longer needed or are being replaced by user-written reports.

The use of the computer and the Information Center will help the user community in the transition to the Executive Workstation.
The fear of the rapidly developing computer technology is the major concern of many non-data processing professionals. Until this transition occurs, the Information Center staff will play a key role in helping the organization utilize current technology in the most productive manner. Once the transition takes place and all the employees have been exposed to computers, the need for the Information Center will decrease. Education in computer technology will become less demanding for the Information Center as computer science courses will be required in the secondary school system and in most colleges. Other responsibilities of the Information Center will be blended in with the responsibilities of systems and/or business analysts.

History of the Information Center

The evolution of the Information Center at BBL began in the fall of 1980. It was during this time that the concept of an Information Center was evaluated, a target application picked, an Information Center Coordinator chosen and the proposal submitted. Using the topics listed above, the proposal addressed specific needs of the BBL organization and its data processing staff.

Product evaluation was the next step. Since budgets were small and no one was sure the idea would be accepted, a language was needed that would require minimal investment. There was one time-sharing application that, if replaced, would justify the existence of the Information Center for the first year. SAS came into play at this point. Being the least expensive and most flexible of the software evaluated, it was chosen. SAS was installed in July, 1981 and the Information Center Coordinator was sent to a SAS/Basics class.

Approximately 30 users were identified as needing SAS training quickly. In August, 1981, the first in-house SAS class was taught and lasted a total of nine hours. This class included training in BBL’s editor (SPM), but no hands-on experience was provided. It did not take long to realize that the class was inadequate.

The opportunity to have the experts teach SAS was presented when SAS announced the video training series.

The video training tapes proved to be too technical for a non-data processing audience and in February, 1982 a 15-hour training class that provided hands-on experience was implemented. The formation of the class was to teach the INPUT statement, PROC PRINT, PROC FORMAT, PROC PLOT, PROC CHART, PROC MEANS, PROC FREQ, and some fundamental programming instructions. The purpose of the class was to expose the user to the idea of the computer and offer some simple solutions to some simple problems. About half of the users trained actually use the software and to date 200 employees have been trained.

SAS/CMStm and SAS/GRAPH® were also added at this time. These products are used by a limited number of people because of the time-consuming nature of graphics and because the transportation of data between VM/CMStm and OS/VStm is very cumbersome. SAS/IMStm was added in March, 1982 so the IMS data bases could be copied for SAS users. SAS/FSP® was added in January, 1983 as an easy data collection facility but, again, the transportation of data between VM/CMStm and OS/VStm has limited the success of the product.

Computer-based training (CBT) is currently under evaluation. With the Information Center staff increased to two, the reduction of classroom teaching would help give the user more consulting time and the self-paced nature of CBT appeals to busy employees. A migration to MVS/TSO this fall will help to make graphics and FSP more successful.

Responsibilities of the Information Center

The Information Center has many responsibilities to the user community. Among these are education, technical support, proper tools and data. The staff of the Information Center should be dedicated to the goals of the Information Center and the organization and have proven interpersonal skills. The person chosen to start the Information Center at BBL came from the MIS Department bringing with them a working knowledge of data processing and the existing systems at BBL. A change in title emphasized a position dedicated to the Information Center.

Once a solid foundation in all aspects of data processing is established, additional staff can come from the user community as long as the ability to learn traditional data processing techniques is demonstrated. Because of the relationship between MIS and the Information Center, each group should have an understanding of the skills required of the other. The Information Center also has a responsibility to the organization to market itself so its continued success is achieved.

1. Education - Proper education is the foundation of a successful Information Center. In-house education is the most cost-effective method of instruction and can offer examples specific to the organization as part of the education process. By offering in-house training, the cost of the Information Center can usually be justified. Students should be encouraged to use the training as soon as possible and, if they can, come to the class with a project in mind. Justification for SAS training is required at BBL to help eliminate employees who are merely curious and to target those individuals with existing needs. The justification requires the supervisor’s signature and asks the user to list any applications to be developed. This information is then used during the training sessions to direct the student to
information that will best suit their needs.

The Information Center must also concentrate on education for the MIS staff to insure a full knowledge of Information Center tools and to provide a basis for MIS and user groups to develop joint projects. Much resistance can be avoided if the programmers and analysts are aware of the purpose and goals of the Information Center. It is important to stress the cooperation between traditional programming projects and Information Center programming. The MIS staff should understand their jobs will be enhanced because the Information Center will take some of the report-generation responsibility from them so their talents can be used in other critical areas.

2. Marketing - Educating management as to the purpose and successes of the Information Center is also important. This is usually referred to as marketing the Information Center. As with any new idea, one will be expected to prove oneself over and over. Management seminars should be given periodically to introduce them to new products, user accomplishments and training available. The commitment of time and talent from the user to do the coding should be stressed so the IC staff is not viewed as another programming group. Without management support the success of the Information Center will be limited.

Marketing can also take the form of an Information Center Newsletter. The newsletter should contain schedules for classes, answers to the most-often asked questions, success stories and new product announcements. The newsletter will then become a reliable communication link for all users of the Information Center.

3. Technical Support - Technical support continues the educational process and begins as soon as the student leaves the classroom. Successful "hand-holding" will guarantee the success of the individual projects. The Information Center staff will spend the majority of its time in one-on-one meetings to help new users get started and help more sophisticated users develop their own systems. Good technical support comes not only from an understanding of the software available, but also from an understanding of data processing and the organization that the Information Center is a part of. By understanding the systems used, the staff of the Information Center can direct the users to the source of the data required and the proper MIS analyst to contact to obtain the data. On-going education of the Information Center staff will help keep the technical support quality high. By attending outside seminars, the Information Center staff can bring current techniques to the organization without a great deal of expense. The Information Center staff should also work with the Human Resources Department to bring in education that may not be a direct responsibility of the Information Center but would help in the productivity of its users (i.e., statistics).

4. Proper Tools - With each job done, the proper tools are necessary to do the job right. Determining what tools can best suit the needs of the user community is an ongoing responsibility of the Information Center. Each software product has an audience that will be able to use it. It is up to the staff of the IC to determine if the product meets the needs of the user community. When choosing the software for the Information Center, one should pick a few key areas of the organization and see if the product will meet the needs. The key areas should be varied and applications within those areas should be identified. Key areas identified by BBL included Research and Development, Quality Control and Quality Assurance, and Marketing Research. These areas had not been serviced by the traditional applications developed by the MIS Department and they readily accepted the opportunity to utilize the computer resources. Applications developed included clinical trial data analysis, market research surveys, and automated product incident tracking. With the ability to do statistical analysis as well as provide a powerful data management facility, SAS is ideal as a "user-friendly" tool.

Once the key areas are successful in using the Information Center, other areas will follow the lead and the success of the Information Center will be underway. It is important to choose software that can grow and change as the needs of the Information Center change. SAS provides the ability to add program products as the needs of the organization change and the talents of the users grow. To start the Information Center with the full family of products will only cause confusion for the users as well as the staff of the Information Center. Only add those products where there is an identified need and ask the users to help in the justification of any new products to be added.

5. Data - One of the most difficult areas to address is the availability of production data files. Making data in a data base available to the user community is as simple as creating a copy of the data base periodically. It should be the responsibility of the MIS programming staff to create the copy and maintain the program.
Data set changes can then be handled by the programmers as part of any system design change and the users will be working with the database experts. The Information Center staff should work with the programmer to determine what data is required by most users and the best storage medium. Each installation has its own requirements for data security and accessiblility and must determine the best method for making data available to the users. Once users are comfortable with the new software, they will realize that the same computer holds a wealth of information that they may need or want. However, the user must be made to realize that everything he sees on a report is not stored in the computer.

Data seen on a report can be made accessible by spooling the print file to a sequential disk or tape file and have the file read by a SAS program. Duplication of the report in a file format will eliminate the need to re-program the report in SAS and will reduce the errors that may occur in the process. Once the report is spooled, the users can sort, add to and subtract from the existing report to meet particular needs.

Using the Information Center products to store data not maintained in a production data base is the largest use of SAS at BBL. System data may be the foundation of a user application and user data is added to it, or the data stored may have no relation to existing data bases. The Information Center staff should have the authority to deny storage to any user application that is not applicable. New users will try to put everything on the system and when resources are limited, someone needs to provide guidelines. Users should be encouraged to use system data whenever possible so that errors are avoided and decisions are made from the common base of the corporate data bases.

6. Planning - Planning the needs of the Information Center takes all of these responsibilities into account. The IC staff should work with the users and management (both MIS management and User management) to focus on future business needs of the organization. The IC staff should work with the technical staff of the MIS department to help in resource planning, CPU utilization, and production requirements. New product evaluations, training programs required, staffing changes, and new systems being designed should all be considered as the Information Center staff plans its goals and growth for the next one to three years.

Responsibilities of the User Community

It is important to make the users aware of their responsibilities before they make a commitment to the Information Center. Documentation, programming and feedback are the key responsibilities of a user of the Information Center.

1. Documentation - The Information Center staff is not responsible for any user applications that use the available products. Guidelines on good documentation techniques should be provided, but the Information Center cannot be responsible for systems left undocumented. Documentation should include sign-on procedures, data entry procedures, processing procedures and report distribution. The importance of documentation must be stressed to the managers as well as the users. During management presentations, personnel turnover, vacations and backup should be included as reasons for documentation. A copy of the user documentation should be kept by the Information Center staff as reference and to document the major activities of the Information Center.

2. Programming - The temptation to do the programming for the user is very difficult to resist. Much time could be saved, in the short run, if the Information Center staff did the programming, but in the long run, the user will never learn to program. It is the responsibility of the user to actually write the program. If the users do not have anything on paper when they come to the Information Center staff for help, ask them to come back when they do. Even if the first attempt is all wrong, the user will never understand the programming if the IC staff does all the work. Make it clear in the management presentations that the Information Center is not another programming arm of the MIS department. Remember the users have the ultimate knowledge of the application they are developing and should control the program flow.

Maintaining the programs written is part of the programming responsibility. Many of the user written programs are one-time reports and the maintenance required is minimal. If the users develop their own systems, responsibility for maintenance should be included with the system documentation.

3. Feedback - The educational process of the Information Center is a two-way street. Every user should comment on their needs, accomplishments and problems. The Information Center Newsletter provides the ideal vehicle to exchange ideas among users and allows them to "brag" about their individual accomplishments.
Feedback should also include benefits and savings realized by using the services of the Information Center. This feedback then becomes the basis of the management presentations given by the Information Center staff.

Conclusions and Recommendations

The Information Center is very successful at BBL but would not be without the cooperation of management, the users and the MIS staff. All these recommendations were not followed in the beginning, but the road would have been easier if they had been.

1. Start slow - Do not try to do it all in a day, week or even a year.
2. Educate the MIS staff - Make them your allies and not your enemies.
3. Dedicate support - A part-time Information Center is worse than no Information Center.
4. Get upper management support - You will not be able to go anywhere without it.

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