

Desktop Computing Integration Project

by

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Project Overview - The Desktop Computing Integration Project for the Human Resources Management Division of LaRC was designed to help division personnel use personal computing resources to perform job tasks. The three goals of the project were to involve HRMD personnel in desktop computing, link mainframe data to desktop capabilities, and to estimate training needs for the division. The project resulted in increased usage of personal computers by Awards specialists, an increased awareness of LaRC resources to help perform tasks, and personal computer output that was used in presentation of information to center personnel. In addition, the necessary skills for HRMD personal computer users were identified. The Awards Office was chosen for the project because of the consistency of their data requests and the desire of employees in that area to use the personal computer.

Involve HRMD Personnel in Desktop Computing - Involving the Awards Office in personal computing required studying available desktop computing applications, identifying current projects where Macintosh productivity software would be helpful, and using the programs to complete a job task. We found that the most readily available programs were Microsoft Works and EXCEL. In addition, there was access to other programs, such as Delta Graph, FoxBase and FileMaker Pro. As we were looking at software packages, a project started that was tailor made for EXCEL. We developed a data set for the exercise, including several graphs and data charts. We identified and used resources around LaRC that allowed printing of the graphs in color. Finally, HRMD Awards personnel documented how the task was done for future reference. This project represented a new area of accomplishment for the Awards staff.

Link Mainframe Data to Desktop Capabilities - Our work began with a brief study of data analysis, capabilities and design. We were interested in presenting the concepts of data management for HRMD personnel so they could use those skills in developing solutions using Macintosh application software. Our target software product for the study was Microsoft Works. This was chosen because of its broad availability throughout the division. We learned about the program through individualized study materials available in the Learning Center. Much of the material presented was review, but some details were important new skills.

After we learned about Macintosh applications, we studied the data that was available on the mainframe system. Our goal in this study was to specify the data necessary for a download session. By examining many reports, along with recent special studies, we identified the content of a proper download from the mainframe database for Awards. This content was translated to specific database elements by searching the database dictionary and examining existing NATURAL programs. This became our specification for a download program, which will require a NATURAL program be written to download the data from the mainframe to the Macintosh. The program will most likely use the linking facility named NATURAL CONNECTION, which allows the mainframe NATURAL database to be easily linked to personal computer applications,

processes and files. The downloaded data will then be loaded into an application such as Works.

With the download program specified, we developed a practice data set using a representative report and optical character reading (OCR) technology. This sample data set allowed personnel to practice the skills necessary to be successful after data is downloaded. We practiced importing data, setting the database format, generating reports, sorting, selection and printing. In addition, we studied how to automate the data import and transformation process by using a macro. This allows automatic, consistent setup of a downloaded set of data.

Estimate Training Needs for the Division - There are three types of skills that users need to be successful in downloading data. These are personal computing basics, data abstraction and data related problem solving. The personal computing basics that are required of the user are working with diskettes, proper use of folders, use of the mouse and desktop, and knowledge of a productivity program. Data abstraction is representing an activity in terms of data. This skill is necessary in personal computer exercises where the user must decide upon content. Data abstraction also requires an understanding of the types of data that are reasonable, such as number, character and date formats. Data related problem solving is applying the personal computer skills, data abstraction and an understanding of data meanings to solve a new problem.

Resources for the Job - There are many resources available at LaRC. Three particular areas that helped us in our personal computing project were the Evaluation and Information Center (EIC), Technical Library and the Learning Center. As an ASEE fellow, I found the NASA Publications such as Spinoff and TECH Briefs to be a great source of information, as well as the Teacher Resource Center and the COSMIC database resource.

The Evaluation and Information Center (EIC) provides technical information to the center and keeps current on hardware and software capabilities. The EIC has many resources available for evaluation and use, such as different hardware platforms, software, scanners and color printers. In addition, the EIC has reviews on products in both magazine and database form, and runs a bulletin board service to provide information and software items. We used EIC hardware and software not available in our division to help us get the job done.

The Technical Library is a comprehensive engineering and scientific library. There are a number of books available on personal computing software. This resource is valuable to the user seeking information on different programs. The on-line catalog, STILAS (Scientific and Technical Information Library Automation System), provides a quick search capability to the volumes on hand. Also, the CD-ROM journal collections allow searching of journals for information, including some full text options for various collections. We used the library as a reference to desktop applications as questions came up.

The Learning Center offers individualized courses in many topics, including personal computing. Their catalog of offerings lists the available training resources. We used the Microsoft Works introductory course as one of our introductory learning aids.

Concluding Remarks - Desktop computing will become increasingly more important to the Human Resources Management Division. Desktop computing will allow the specialist to present data in ways not otherwise available. Downloading of data from a mainframe to personal computing applications will be a good tool for responding to requests that have historically required either manual processing or user written programs.