



ONLINE SERVICES: LET YOUR FINGERS DO THE WALKING . . .

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Abstract

University computing centers used to be hubs of activity. All university personnel--faculty, staff, and students--found the need to stop in or phone their computing center at least occasionally. They would visit the center to work on a terminal, to pick up printouts, to punch cards or submit a card deck for execution, to report malfunctioning equipment, to register complaints, to request a computer account, and/or seek consultation. But additional equipment and services including remote terminal areas with printers and consultants, new microcomputer laboratories, and the elimination of punched cards, has turned the busy computing center into a memory. Today's users are looking for convenience--all the same services at their finger tips on terminals or micros on their desk or just down the hall. Walking to another building to locate the necessary equipment or to seek a particular computing service is no longer acceptable.

Eastern Kentucky University has risen to meet this new challenge of user convenience by offering a broad selection of online computer services. This presentation will cover the evolution of these online user services from a simple online "news" service to interactive consulting and equipment problem reporting services. A discussion on proposed additional online services will also be included.

Environment

Eastern Kentucky University is a regional university in the heart of the Bluegrass country in central Kentucky. Enrollment is approximately 13,000, many being first-generation college students. The academic computing facilities include a MICOM Micro 600/2A intelligent port selector, a DEC VAX-11/785, a DEC PDP-11/70, and access to a remotely located IBM 3081 at the University of Kentucky through the Kentucky Educational Computing Network (KECNET). The EKU campus network is composed of over 100 public access terminals in more than 20 campus locations. Additional terminals and microcomputers are located in numerous faculty and staff offices and departmental laboratories. An increasing number of students are also purchasing their own microcomputers with communications equipment.

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The Early Days

Timeshare computing began at ECU in 1976 with the purchase of the PDP-11/70. Online user services were minimal--short login messages written by the system manager and HELP files provided by the operating system (RSTS/E). In time, it became apparent that the system-supplied HELP files were inadequate for the needs of the user community. Additional HELP files describing local programs and system features were then included.

To alert the users of new HELP files and software installations or changes, a NEWS system, patterned after a NEWS system on a DEC-10 at the University of Louisville, was written and installed. Similar to HELP files, NEWS files contain messages which briefly describe and advertise the latest features of the system or alert the users of specific system scheduling such as downtimes, account expirations, and disk backups. All NEWS files are stored in a system account which has been given system-wide read permission. Users may scan the NEWS file topics by issuing the command NEWS * which accesses a particular NEWS file containing only headlines and creation dates. The NEWS file on a specific topic, accessed by issuing NEWS followed by the topic name, usually closes its message by directing the user to a corresponding HELP file containing more detailed information or instructions. Users are encouraged to review the NEWS files frequently and keep up-to-date with the latest computing events on campus.

In addition to short news items, we have also found it useful to include policy statements (such as references to the ECU Code of Computer Ethics), a list of terminal locations, and system uptime/downtime statistics in NEWS files. Users can't be reminded often enough of some of these vital, although local, system facts.

The next online service offered was a suggestion/complaint facility. It involves a staff-written BASIC program named GRIPE which is stored in a system library accessible to the entire system. Account holders who wish to comment on the available hardware, software, or services execute the program which prompts them for their opinions or suggestions. Messages are stored in files in the system account and are read once each week by the system manager. Responses to the messages are recorded in files named GRIPE.ANS in the users' accounts so that they can be reviewed at the users' leisure. Suggestions or complaints of wide-spread interest are often published in the campus computing newsletter along with the system manager's response.

Online services remained about the same for a number of years as computing use escalated at ECU. The PDP attempted to keep pace with the growing demand, but was quite often brought to its knees. In the meantime, the number of terminals on campus nearly doubled, communication lines increased in number and in speed, and students, faculty and staff screamed for more equipment.

More Power

A second timesharing computer, a DEC VAX-11/780 (upgraded to a VAX-11/785 several years later), and the MICOM Micro 600/2A intelligent port selector were installed in early 1983. From this point in time online services at ECU really began to expand.

HELP facilities on the VAX are far superior to those on the PDP. The VMS operating system provides extensive HELP libraries which are easily expanded to include local requirements and documentation. The NEWS system which originated on the PDP was implemented on the VAX using the built-in library facility. Each new third party software package installed on the system is now advertised using brief upbeat login messages, NEWS articles, and whatever HELP files are needed. More recently, the Academic Computing newsletter, THE PASSWORD, was placed online in a VAX HELP file. Individual

newsletter articles can be selected by the users for tips, hints, schedules, etc., while logged in instead of depending on their printed copy.

The PDP suggestion and complaint facility, GRIPE, was implemented on the VAX using VMS MAIL--a built-in online MAIL system for all accounts. An account (ACSGRIPES) was created to receive the MAIL and was advertised to the user community through NEWS, HELP, and the campus computing newsletter. What could be simpler? Users compose their suggestions or complaints using the system MAIL utility and send their messages to the ACSGRIPES account. The system manager checks the MAIL messages in that account once each week and responds accordingly. Users are notified that a message is waiting in their MAIL file on their next system login. There is one drawback--response turnaround. ACSGRIPES is fine for casual comments or suggestions. Weekly responses, however, are usually not timely for complaints or questions which demand and expect quicker answers.

Therefore online consulting was introduced. Academic Computing staffs two consulting desks daily during the standard workweek of an academic semester--staff consulting and student consulting. Both desks are equipped with terminals, so online consulting was a natural step forward. Accounts were created for each of the consulting desks and the usernames were advertised to the computing community in the usual fashion. The consultants are instructed to login to the accounts at least once an hour and remain logged in for at least 15 minutes. During that time they answer any MAIL messages sent earlier or respond to VMS PHONE utility messages as received (VMS PHONE is a one-on-one communication utility between one or more accounts--just like talking on the telephone). Although many inexperienced computer users are somewhat intimidated by MAIL and PHONE, the more seasoned users are quite comfortable using this service. It is most helpful to those users on terminals in areas not conveniently located to a consultant or to a telephone to call a consultant.

The staff consultant account has also been given privileges to scan users' accounts if need be in order to offer programming or project assistance. This is very helpful in retrieving copies of programs and data files during consultation.

No More Cards

Earlier it was mentioned that a third computer, an IBM 3081 at the University of Kentucky, was accessible by the ECU computing community. Communication with the 3081 is handled by a dedicated network through a remote station at ECU. Before 1983 all data input was on cards. In past years many programming classes (COBOL, FORTRAN, RPG, Assembler, etc.) and large research projects using SAS accessed the 3081 on a daily basis. A full classroom of keypunch machines near the computing center was necessary to handle the punch card load. The card reader and output line printer for all of these jobs was located in the computing center itself. The daily traffic in the computing center during the height of the academic year was very heavy. Timeshare users on the PDP could access the system from several locations on campus, but batch processing on the IBM 3081 was handled only from the computing center.

The installation of the VAX-11/780, however, included the necessary communications software and hardware (COMBOARD/HASP) to directly communicate with the IBM 3081 at the University of Kentucky. Users can now create their IBM jobstream on the VAX using the VMS editor from any terminal on campus and send the job to the 3081 for processing with a single command. Output of their jobs is returned to their VAX accounts for review or printing at their leisure.

As usage on the new VAX continued to grow, new terminal areas were installed (including clusters in dormitories) and slow hardcopy terminals with high maintenance fees

were replaced with faster display units and remote line printers. Because of the port selector, users can now access all three systems (PDP, VAX, and IBM) from any public access terminal location on campus as well as from the convenience of their own terminal or microcomputer. It is no longer necessary to physically walk to the computer center in order to submit a job to the IBM 3081 or to retrieve printed output from any of the three systems.

The classroom full of keypunch machines and the card reader have been eliminated. The second line printer, which could have been run 24 hours per day several years ago in order to meet the demand, now sits idle 90% of the time and is scheduled for removal.

Equipment Repair

The new equipment (terminals, printers, communications gear, etc.), needless to say, has increased our equipment maintenance. Academic Computing hires students with skills in electronics from the Industrial Education and Technology Department to assist with the day-to-day maintenance, including preventive maintenance, of the hundreds of pieces of computing equipment. Even though the student technicians run routine checks (usually weekly) on each public access terminal area, equipment still malfunctions in the interim. Users are encouraged to report malfunctioning equipment to Academic Computing by telephoning the Consultant on Duty, who in turn, completes an "Equipment Problem Report".

Our newest online service has automated the "Equipment Problem Report". Users no longer need to telephone Academic Computing, but rather execute a Pascal program named PROB on the VAX. The program prompts the user for all of the necessary information including equipment number, location, and description of the problem. It automatically supplies the date and the username of the account reporting the problem. The report is stored in the Consultant on Duty's account and queued for printing as part of the Consultant's logout process. Consequently, users can report malfunctioning equipment at any time of day or night from any terminal on campus provided, of course, that they can find an operational terminal.

Additional Services

While waiting for the necessary funding to automate its complete card catalog, the EKU John Grant Crabbe Library developed a smaller online catalog on the VAX of its most recent 2000 new acquisitions. Entitled NEWBOOKS, the system is available to everyone, VAX account holder or not. It is managed through a captive VAX account named NEWBOOKS without a password. The menu-driven system was written in VAX DATATRIEVE by library personnel with Academic Computing assistance. NEWBOOKS can search its database by author, subject, title, call number, location, or publication date--or experienced DATATRIEVE users may customize their own searches. In addition to campus-wide accessibility on public access terminals, the library has installed two separate terminals specifically for NEWBOOKS use. Library personnel also conduct numerous workshops on the use of the NEWBOOKS system.

As learning is on-going, several computer assisted instruction (CAI) packages have been installed on the VAX. In a university environment, someone is always "just starting to learn" a particular language or software package. Many people prefer to be taught, even electronically, rather than to sit down and read a manual. The more popular CAI packages on the VAX include EDT, DATATRIEVE, and ADA. Again, this service is available to all VAX accounts and can be accessed from any terminal on campus.

Future Plans

As computing at ECU continues to grow, several more online services are in the planning stages. The current VAX account application process is completely paper oriented and handled through the campus mail or by visiting the computer center. In the future, all account applications and change requests to current accounts will be handled by an online system with user prompts. Eventually the entire campus library card catalog will be automated and available on the campus network. The equipment technicians envision an online equipment status facility which can inform users which units are currently out-of-service for repair. The consultants have a full-scale campus bulletin board on their wish list. Another major goal of Academic Computing is to automate a reservation system for the microcomputers in the centralized Micro Center. And some day, way off into the future when all faculty members have access to a terminal or a micro with communications equipment within several feet of their desks, a full-scale campus MAIL system will be possible.

Conclusion

Times have definitely changed. Convenience is the key. Users who previously were thrilled to have computing services in any shape or form now grimace at the thought of walking to the computer center or picking up the telephone and calling. Eventually the thought of walking down the hall to the nearest terminal area or micro laboratory will result in a similar reaction. My only fear as a consultant is the eventual loss of the human element--smiling faces and friendly voices to associate with the names of frequent users. But by that time, however, video transmissions will perhaps be more commonplace and faces and voices of users will possibly appear on the computer monitor itself.

In order to meet these demands, however, more equipment and software are required. And that takes money--a commodity hard to find in many regional universities such as ECU. Funding is paramount in order to "let your fingers do the walking..." and to continue walking in the years to come.